THE NATURAL HISTORY OF THE MUSICAL BOW

PRIMITIVE TYPES

HENRY FROWDE, M.A.

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THE NATURAL HISTORY

OF

THE MUSICAL BOW

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A CHAPTER IN THE DEVELOPMENTAL HISTORY OF STRINGED INSTRUMENTS OF MUSIC

BY

HENRY BALFOUR, M.A.

CURATOR OF THE PITT-RIVERS MUSEUM, UNIVERSITY OF OXFORD

REFERENCE

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THE NATURAL HISTORY OF THE MUSICAL BOW

τόξον φόρμιγξ ἄχορδος

IN emphasizing the important position occupied by the archer's bow as the prototype of a large series of stringed instruments of music, I in no way profess to advance a new theory. The bow has long been very generally accepted by students of the subject of the evolution of musical instruments, as the parent form whence sprang a long line of descendants, which, under favourable circumstances, have developed into some of the most elaborate and highly specialized of modern instruments. Some writers even go so far as to refer *all* stringed instruments to this origin, though this position is manifestly untenable, as there is abundant evidence to show that we must refer back to a plurality of ancestors, in our endeavours to work out the phylogeny of the whole group of instruments whose musical sound is produced by the vibration of tense strings. We need not even despise the time-honoured legend of the invention of the zither or lyre by Hermes, and we may still give to the son of Zeus and Maia due credit for originality in having discovered latent musical qualities in the sinews of a dead tortoise, stretched, in drying, across the animal's carapace. Stringed instruments have, in fact, arisen in a variety of ways, one of which it is my purpose to discuss.

Several years ago General Pitt Rivers (then Colonel Lane Fox) introduced into the collection of musical instruments,

which formed part of his magnificent ethnographical collection, a small series of instruments from Africa, to illustrate, by means of modern *survivals* of early types, some of the principal stages between the more simple and primitive instruments allied to the bow of the hunter, and the more specialized harp-like instruments of that continent. This short but concise series, illustrating as it does the principles of classification of ethnographical material originated and adopted by General Pitt Rivers, has always been one which has attracted the attention of visitors to the collection presented by him to the University of Oxford. I shall have occasion to refer to this interesting series several times in the course of my paper.

Of late years the investigations of scientific travellers have brought to light many fresh examples of 'musical bows' and closely allied forms, and, with a far wider range of material, one is in a better position to trace the affinities of the various types of the instrument, its geographical distribution, and the probable lines of dispersal, although there is still much to be learnt before anything approaching unbroken continuity can be established.

My object, then, in this paper is to bring together, so far as I am able, the available material for, so to speak, a Natural History of the Musical Bow and its derivatives; to give a sketch of its geographical distribution; to describe the principal varieties under which it occurs; and to endeavour to indicate its place in the phylogeny of certain stringed instruments of higher types.

It is necessary to start with the reasonable assumption that, whereas, where circumstances have proved favourable, and have allowed unchecked progress, instruments have emerged from their primitive condition and have advanced from simple to complex, from generalized to specialized, still, certain conditions of the environment have caused the retention and *survival* in various regions of instruments of the more *primitive* forms, whose developmental progress has been arrested or retarded at various stages in the general

advance. Were the tale of such survivals complete, we should have, as it were, a living genealogical tree, which would supply us with all the material necessary for the study of the developmental history of the group. As it is, many forms have dropped out and disappeared completely, leaving us certain types only, representing branches upon the genealogical tree but imperfectly connected with one another and with the main stem. These surviving types, however, frequently indicate sufficiently well the probable lines of connexion, and the gaps in the continuity can with more or less confidence be filled in, with a view to the reconstruction of the family tree from its fragments.

Tradition and Legend.—It is interesting to recall what tradition and legend have to say upon the subject of the bow as a musical instrument. In Northern India there still exists the *pinâka*, an instrument of bow-like form and of the simplest construction (I describe it in detail below). The natives see in this the prototype of all stringed instruments, and legend attributes the invention of the bow as a musical instrument to their extremely versatile god Śiva[1]. In Japan there is the pretty legend which incidentally accounts for the origin of one of the most popular national instruments, the early six-stringed *koto* (*Yamato koto*). This legend relates how, when the Sun-goddess, Amaterasu, annoyed at the conduct of her brother, Susanòo, had shut herself up in a cave, and so plunged the world in darkness, amongst the various devices employed by the gods to lure her from her retirement, was an instrument extemporized by Améno Kamato, who placed six archers' long-bows close together with their strings uppermost. The strings were made of the moss, *saru no ogase*, found hanging on the branches of the pine-tree, *matsu*, high up in the hills. His son, Naga-shiraka, produced music by drawing across the strings grass and rushes, *chi* (Eulalia japonica) and *suge*. From this extemporized musical instrument, it is said, the six-stringed *koto* of Japan was derived,

[1] Raja Sourindro Mohun Tagore, *Short Notices of Hindu Musical Instruments.*

and traces of its traditional origin may to this day be seen in the six projections at one end of the instrument to which the strings are severally attached, and which seem to simulate and recall the ends of the six bows lashed together to form the original instrument[1]. Here, as in India, we find the bow as the, at any rate legendary, prototype of stringed instruments.

Similarly in Greece the well-known legend was rife, which attributes to Apollo, the god *par excellence* of the bow as of the sun, the invention of the *kithara*. According to the version of the legend given by Censorinus, the idea of using a tense string for producing a musical note was suggested to Apollo by the twang of the bow-string of his twin-sister Diana, the moon-goddess[2]. The legend does not explain why Apollo's *own* bow was not sufficiently suggestive.

Writers in all ages draw attention to the musical note emitted by the bow-string when released in shooting, and dwell upon the delight which it afforded to the archer's ear.

> Λίγξε βιός, νευρὴ δὲ μέγ' ἴαχεν.—Homer, *Iliad*, iv. 125.
>
> Δεξιτερῇ δ' ἄρα χειρὶ λαβὼν πειρήσατο νευρῆς·
> ἣ δ' ὑπὸ καλὸν ἄεισε, χελιδόνι εἰκέλη αὐδήν.—*Odyssey*, xxi. 410.
>
> Τόξων χερὶ ψάλλουσι νευράς.—Euripides, *Bacchae*, 783, 784.

In these passages occur the words ἰαχεῖν, ἀείδειν and ψάλλειν, as descriptive of the sounding of the bow-string, 'ringing sweetly at the touch like the swallow's note,' as Homer tells us. With the Hindus the word *dhanus ṭankara* would seem to refer to the same sound (*dhanus*, a bow; *ṭankar*, twang (of bow-string), *ṭaṅkorna*, to twang, Platt). Our own expression 'to twang' is perhaps hardly suggestive of any delicate musical effect, but is at the same time *onomatopoeic*, if rather brutally so.

[1] Ernest Satow, *Shrines of Ise*, Trans. Asiat. Soc. Japan, ii. p. 130, 1874. Also F. T. Piggott, *Japanese Musical Instruments*, 1893, pp. 8, 139, and *The Music of the Japanese*, Trans. Asiat. Soc. Japan, xix. p. 279.

[2] 'Animadvertisse . . . cundae sonantis suavitatem in arcu sororis Apollinem tradunt et intendisse protinus citharam, tum notasse quod adstrictiora fila nervorum in acumen excitarentur, gravibus responderent remissa.' Fragmentum Censorino adscriptum, cap. xii. *De Modulatione*, ed. Otto Jahn, 1845.

In tracing the gradual transition from the archer's bow, pure and simple, to the bow specially adapted to the production of musical sounds, three main stages are observable. These stages can be well illustrated by the various types of musical bows to be found still in the African continent.

STAGE I.

The temporary conversion of the archer's bow into a musical instrument, as described in the old legends, is aptly paralleled at the present day in South-West Africa.

Damara bow.—The Damara is still in that stage as regards musical research, and, when seeking relaxation, temporarily converts the bow, *oüta,* used in hunting into a musical monochord, and whiles away his spare time in strumming upon his improvised instrument. It is true that the use of the bow as a weapon is now practically confined to the boys and younger men, and it is no longer the serious weapon of yore. With the elders it now serves almost exclusively as an instrument of music, whose string-note soothes and no longer excites the savage breast; but it remains, nevertheless, essentially an ordinary hunter's bow, the differentiation into a bow made and used solely for musical purposes not being complete. When required for music, all that is done is to add a little string bracing towards, but not at the centre of the bow, drawing the bow-string to the bow. This not only tightens the bow-string and raises the notes producible, but also divides it into two unequal lengths giving different notes, which can be elicited by tapping rhythmically with a small stick [Fig. 1]. Francis Galton[1] says of the Damaras, 'Their only musical instrument is their bow. They tie a piece of reim round the bow-string and the handle, and bind them together, then hold the bow horizontally against their teeth, and strike the tense bow-string with a small stick. A good performer can produce great effect with it; they attend more to the rhythm than to the notes, and imitate with its music

[1] *Travels in S. Africa,* 1851, ed. 1889, p. 117.

the gallop or trotting of different animals to perfection. The baboon's clumsy canter is the *chef d'œuvre*, and when well executed makes everybody roar with laughter.' Andersson[1] also states that 'the Damaras are very fond of music. The only musical instrument known amongst them is the bow (a kind of temporary jews-harp). By this instrument the performer endeavours (and frequently with much success) to imitate, musically, the motion peculiar to different animals; for example, the awkward gallop of the giraffe, the quick trot of the zebra, and the lively caperings of the beautiful gazelle.'

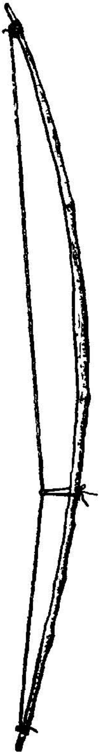

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Fig. 1. *Outa*, ordinary shooting bow of the Damara, South West Africa, temporarily converted into a musical bow; length 4 ft. 2½ in. in straight line. From a specimen obtained by Dr. C. G. Buttner, and presented by him to the Berlin Museum.

Dr. C. G. Büttner of Berlin, formerly a missionary for many years in Damaraland, has kindly supplied the following information[2]: 'The natives of Damaraland, both the Hottentots and the Hereros, as well as those inhabiting the hills of Damara, use the bow as a musical instrument. For this purpose the string is again tied near the centre by a separate cord as strongly as possible to the bow. The performer now places the centre of the bow against the half-opened mouth, and strikes the cord with a small stick. The hollow of the mouth serves as a sounding-board during the performance, and, by altering the position of the mouth, experienced performers can produce different notes. The volume of sound is always very small, and the instrument serves really only for the entertainment of the performer. However, the

[1] *Lake Ngami*, 1850-4, p. 230.

[2] Letter, dated March 21, 1890, received through H. E. Sir E. Malet.

natives derive such pleasure from it, that they spend hours at it; it being a special source of amusement to the herdsmen.' Dr. Büttner also very kindly forwarded for inspection a Damara bow equipped for musical purposes. The bow is about 4 feet 3 inches in length, tapering slightly towards the ends; the striking stick is very slender and about 7 inches long.

The missionary Brincker of Stellenbosch, who has worked for over twenty-seven years in Damaraland, gives a very similar description[1] in which he says, 'the bow is held between the teeth at the place where the connecting cord is fastened to the wood, in such a manner that the cavity of the mouth

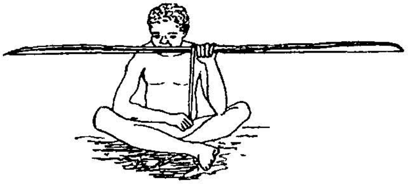

Fig. 2. Herero of Damaraland playing upon the extemporized musical bow. From G. Fritsch, *Eingeborenen Süd-Afrikas*, 1872, fig. 53. (Ferdinand Hirt, Breslau.)

serves as a resonating board. By striking the bow-string (the two halves of which enclose an obtuse angle) at different points with a short, thin stick, several notes can be obtained, which, although clearly audible to the musician himself, cannot be distinguished by others at a distance of more than six to eight paces. The Hereros do not possess any musical instrument with a special name, but only the archer's bow (*oüta*), which is used both for shooting and for musical purposes. Playing upon the bow is designated by the expression *otjihumba*.' Gustav Fritsch, who figures[2] an Herero playing upon a bow in the manner described [see Fig. 2], says, '... Die

[1] Translation received through H. E. Sir E. Malet and Baron Holstein, dated May 1, 1890, Cape Town.

[2] *Eingeborenen Süd-Afrikas*, 1872, fig. 53. Description on p. 225.

angezogene Sehne wird darauf mittelst eines Stäbchens geschlagen, während die andere Hand die Spannung zu reguliren sucht und gleichzeitig der Musiker summende Töne ausstösst: eine zwar keineswegs melodische Musik, die aber doch stundenlang mit der grössten Andacht fortgesetzt wird.'

In the Damara hunting-bow *temporarily* converted into a musical instrument, we have a living representation of a *first stage* in the evolution of musical instruments.

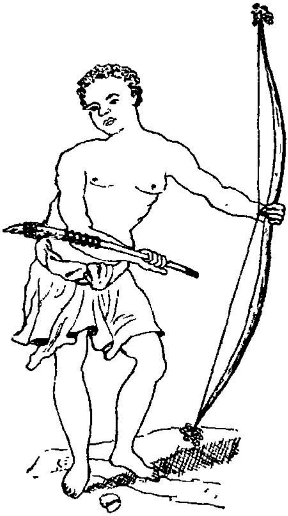

Fig. 3. Kaffir playing upon a musical bow; after Filippo Bonanni, *Gabinetto Armonico*, 1723, pl. 145.

Mandingo.—Mungo Park[1], in describing the various musical instruments of the Mandingo of Western Africa, adds, 'Besides these they make use of small flutes, *bow-strings*, elephants' teeth, and bells.' We may gather, from the simple mention of bow-strings without further description, that the bows themselves were but little, if at all, differentiated from ordinary shooting-bows.

Kaffirs.—An instrument almost identical with the Damara one is figured (rather fancifully) by Filippo Bonanni[2], the Jesuit priest, as belonging to the Kaffirs ('arco de' Cafri'); his description runs thus: 'Ornano di fiori i due capi d' un arco, da' quali vien distesa una, e più corde distribuendole una superiore all' altra; indi raccomandate con altra corda nel mezzo del detto arco, le percuotono con la punta d' una penna di cigno ripiena nel grosso d' essa di piombo, ò di legno, e ornata similmente di fiori, sonagli, e lamine. Preparato

[1] *Travels in Africa*, 1816, i. p. 271.
[2] *Gabinetto Armonico*, Rome, 1723, pl. 145, p. 175.

così l' Istromento con la sinistra prendono l' arco in tal modo, che il pollice dia le dovute consonanze col tasteggiare la corda di mezzo premendola più, òmeno fuori dell' arco, ed armano la destra della penna, che mentre batte in diverse parti delle corde secondo il tuono, che devono rendere, oltre all' armonìa delle corde, eccita un' acuto romore ne' sonagli e lamine, di cui và ornata. Tanto conferma chi ha veduto, e sentito tal' Istromento.' [Fig. 3.] The mention of more than one string seems to take some of these instruments out of the present class, but the instrument shown in Bonanni's figure is a practically unaltered bow, which might at any time be used as a weapon, by removing the bracing string and jingling ornaments.

In the account of Linschot's voyage[1] is figured a Kaffir (Mozambique and neighbourhood) playing upon a precisely similar musical bow to that of the Damaras, though it is of smaller size [Fig. 4]. The player is represented as holding the centre of the bow in or against his teeth, and striking the braced string with a small stick. Possibly these Kaffir instruments should come rather under the next class (Stage II), the fact of the Kaffirs no longer using the bow as a weapon, though formerly they did so, making it likely that the bows represented are not really converted weapons, but are purely for musical pur-

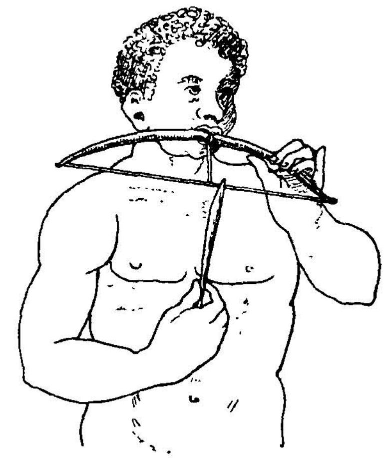

Fig. 4. Kaffir (Mozambique region) playing upon musical bow; from *Hist. de la Navigation de Jean Hugues de Linschot*, 3rd ed. Amsterdam, 1638, pl. 24.

[1] *Hist. de la Navigation de Jean Hugues Linschot*, Amsterdam, 3rd ed., 1638, pl. 24, pp. 60, 61.

poses. The small size of the last described example would also point to this. At the same time they cannot well be separated from the Damara bow, and they may be regarded as intermediate between the two stages.

STAGE II.

The *second stage* in development is represented by those monochord instruments which, although they are practically bows and nothing more, are *made* for musical purposes alone, and in many cases not only are not, but could not be used for shooting.

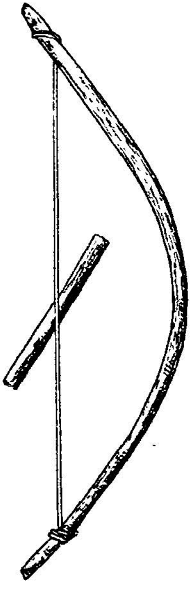

Fig. 5. *To*, musical bow, Niger and Benuè natives; British Museum; figured in M. F. Ferryman's *Up the Niger*, 1892, plate of musical instruments, fig. 5.

Niger and Benuè.—In this class we must include such instruments as the *to* of the Niger and Benuè river regions, a specimen of which is in the British Museum, brought home by Mr. M. Ferryman, and described by Capt. C. R. Day [1]. This [Fig. 5] is a somewhat clumsy, short, thick bow of wood with a coarse string of creeper. 'When played, this string is placed between the lips of the performer, who, with a short piece of stick held in the right hand, strikes the string, at the same time holding the bow at the far end in his left hand. He also holds in his left hand a short stick, which he keeps pressed loosely against both bow and string.'

Bimbia.—Capt. W. Allen, R.N.[2] says that the people of Bimbia 'have a sort of harp in the shape of a bow, of light wood, tightly strung with the hard fibre of some creeping plant; this is placed inside of the teeth, and breathed on with more or less force,

[1] M. Ferryman, *Up the Niger*, 1892, p. 269, pl. fig. 5.

[2] *Narrative of an Expedition to the R. Niger in* 1841, ii. p. 298, 1848.

as with the common jews-harp, and by striking the chord with a light piece of stick, the sounds are produced.' A figure of this instrument is given in the first volume, and shows it to be a simple and undifferentiated bow, apparently of small size. No native name is given.

Kamerun.—In the Ethnological Museum at Stockholm are two rough, plain musical bows with a stout hide thong, from the Kamerun district.

Lower Guinea.—The Bondas of Lower Guinea have the *ganza*, which is 'simply a bent bow strung with a metal wire or a chord of bark fibre. It is lightly struck with a small stick of wood or iron, and the string is shortened or lengthened by the action of the thumb-nail of the left hand that holds the instrument [1].'

Fig. 6. Bubi of Fernando Po, playing on musical bow; after O. Baumann, *Eine Africanische Tropen-Insel, Fernando Póo und die Bube*, Vienna, 1888, p. 99 (E. Hölzel, Vienna).

Bubi, Fernando Po.—Closely similar to the *to* and the 'Bimbia harp' is the rude musical bow of the Bubis of Fernando Po. Dr. Oscar Baumann has described this instrument and gives a figure of a Bubi playing upon it [2] [Fig. 6]. He says, 'Ein sehr einfaches Musikinstrument ist die Maultrommel der Bube. Dieselbe besteht aus einem gebogenen Stocke, welcher eine Bastsehne besitzt. Das eine Ende wird gegen den Mund gestemmt; die Rechte schlägt mit einem Stäbchen an die Saite, während die Linke einen Messerstiel daran drückt. Durch Verschieben des Messerstiels und mehr oder weniger Oeffnen des Mundes werden einige Töne hervorgebracht.' Miss M. H. Kingsley, to whom I am indebted

[1] Featherman, *Social History of Mankind*, Nigritians, p. 411.

[2] *Eine Africanische Tropen-Insel, Fernando Póo und die Bube*, Wien, 1888, p. 99.

for the foregoing reference, also describes this instrument of the Bubis[1]. The practice of scraping or pressing the string of a musical bow with a piece of shell, or a knife-blade or other piece of metal, for the purpose of altering the note produced by the tapping with a stick held in the other hand, is, Miss Kingsley tells me, common on the mainland both North and South of the Congo. As the Bubis appear to be an essentially *primitive* African race, an isolated survival from a very long condition of culture, it is strictly in keeping with their general status that their musical instruments should be of almost the simplest possible type.

Angola.—A musical bow, *n'kungo*, from Angola is mentioned by O. T. Mason[2]. A curved, whip-like bow with string of vegetable fibre, with a bracing loop round bow and string. Struck with a small stick.

Bongo.—Schweinfurth[3] describes a monochord of the Bongo of Central Africa (6°–8° N., 26°–30° E.). 'This consists of a bow of bamboo, with the string tightly strained across it, and this is struck with a slender slip of bamboo. The sounding-board is not, however, made of a calabash attached to the ground, but the mouth of the player himself performs that office, one end of the instrument being held to the lips with one hand, while the string is managed with the other. Performers may often be seen sitting for an hour together with an instrument of this sort: they stick one end of the bow into the ground, and fasten the string over a cavity covered with bark, which opens into an aperture for the escape of the sound. They pass one hand from one part of the bow to the other, and with the other they play upon the string with the bamboo twig, and produce a considerable variety of buzzing and humming airs which are really rather pretty. This is quite a common pastime with the lads who are put in charge of the goats.' The use of a resonator, other than

[1] *Travels in West Africa*, London, 1897, p. 67.
[2] *American Anthropologist*, x. 1897, p. 378.
[3] *Heart of Africa*, i. p. 130, 3rd Eng. ed.

the mouth, is to be noted, though it does not actually form part of the instrument, but is external to it.

Niam Niam.—In the Ethnographical Museum at St. Petersburg I saw a small musical bow (No. 176) of the Niam Niam, about 2 feet 3 inches long. The string passes over the extreme ends of the bow, where slight notches are cut to hold it, and is tied round the bow at a short distance from the ends [Fig. 7].

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Fig. 7. Musical bow of the Niam Niam; length about 2 ft. 3 in. Specimen in the Ethnographical Museum, St. Petersburg.

Zulu.— In South Africa several very simple types of musical bow occur. A Zulu musical bow is described by O. T. Mason[1] under the name *samuius*. The bow is short, flat, and wide, with a single string of steel wire, gut, or vegetable fibre. In the specimen referred to the steel string is rapidly struck with a double and twisted steel wire, while the back of the bow is held against the open mouth, which acts as a resonator. The tones are changed by changing the capacity of the mouth.

In the Natal Court of the Colonial and Indian Exhibition in London in 1886 was a musical bow (No. 967 in *Catalogue*) described as '*Umqangala*. Musical reed, with a cord of sinew to be struck up and down with the thumb and fore-finger of the right hand, to regulate the notes, whilst one end of the reed is thrust into the mouth.'

Basuto.—A modified bow-instrument is found amongst the Basuto, the *tolo tolo*, which consists of a bow, the centre of which is straight, cylindrical, and thick, perhaps 18½ inches long. The ends, which are 7 to 8 inches

[1] *American Anthropologist*, Nov. 1897, p. 378 (specimen No. 95,201, Cat. U. S. Nat. Mus.).

long, are quite slender and flexible, and are notched at the extremity to hold the end of the bow-string. The whole bow may be cut from a single piece of wood [Fig. 8], or the flexible ends may be separate pieces stuck into the ends

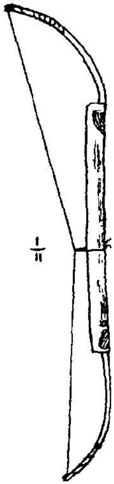

Fig. 8. *Tolo tolo*, Basuto, cut from single piece; length in straight line $33\frac{3}{4}$ in.; bought at Paris Exhibition, 1889. Oxford University Museum.

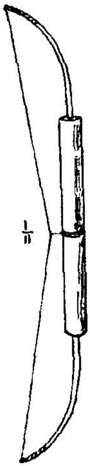

Fig. 9. *Tolo tolo*, Basuto, the flexible ends of separate pieces; length in straight line $31\frac{5}{8}$ in.; obtained by Mr. F. S. Lewis, 1890. University Museum, Oxford.

Fig. 10. Musical bow, Chibi's country, Mashonaland; length $30\frac{3}{4}$ in.; obtained by Mr. J. T. Bent; British Museum.

of the stiff central portion [Fig. 9]. The bow-string is of fine brass wire, and is braced to the bow towards the centre by a fine string. This instrument is, as usual, held to the mouth, and tapped with a small stick.

Mashona.—Mr. J. Theodore Bent brought back a small specimen of musical bow from Chibi's country, Mashonaland.

It is now in the British Museum. The cane bow is 2 feet 6¾ inches long, with fine string; the bow is ornamented with a pattern of incised triangles filled in with crossing lines [Fig. 10].

Swazi.—In the Ethnographical Museum at Berlin is a Swazi bow of reed, about a yard long, with fibre string, which is fixed at each end of the bow to a little projecting spur. The bow was held in the teeth in playing, and the string was struck with a small stick (C. Beyrick coll. 1892).

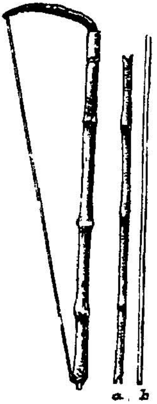

Fig. 11. Musical bow with one flexible end, stick (*a*) for pressing against string and striker (*b*); length 22 in.; Zululand. Mrs. J. Crosby Brown's collection, New York.

Zulu.—A curious aberrant form, though one seemingly allied to the Basuto instrument with flexible ends, is one from Zululand in Mrs. J. Crosby Brown's collection in New York, and described in her splendid catalogue[1]. The bow consists of a stiff, straight stick (apparently bamboo), into *one* end of which is inserted a short, flexible stick; the string is stretched between the free end of the flexible piece and the other end of the rigid stick, causing the former to curve over considerably, and giving an unsymmetrical appearance to the bow. The whole is 22 inches long [Fig. 11]. In playing, one end of a loose reed-stick, which is notched, is placed against the bow-string, the other end against the body, by which means the tension of the string can be varied. With a smaller piece of reed the string is struck. I know of no other example of this peculiar form. The manner of using the notched stick for altering the tension of the string and dividing the latter into two parts, suggests to one that the *arrow* as well as the bow may have occasionally lent its services for musical purposes in the early stages when the

[1] Mrs. J. C. Brown, *Musical Instruments and their Homes*, Africa, fig. 6, New York, 1888.

bow was yet a weapon. This notched stick takes the place of the string bracing more commonly seen, and has the advantage over the latter in being adjustable during the playing.

? **Basuto.**—Another simple musical bow was sent to me in 1890 by Mr. F. S. Lewis from South Africa (? Basuto). It is characterized by the stiffness of the 'bow,' which is not tapered towards the ends, and by the relative fineness of the string, which could not stand the strain of keeping bent so unyielding a bow; and it therefore seems certain that some such moveable 'bridge' as that used with the last described specimen, must have been used, in order to keep the string tense and prevent its striking the bow when vibrating. Its native name is *gwale*, and it is used by native boys.

Kaffir.—A peculiar type of simple musical bow is described by Mrs. R. Monteiro[1], as used by the Kaffirs of Delagoa Bay. This instrument consists of 'a piece of cane about 2 feet long, and only slightly bowed by a string of twisted horsehair, a few rude holes being cut inside the bow for about half its length. This instrument is played by the lips being pressed against the horsehair and cane over the holes, and then tapping or picking at the horsehair with the finger tips or nails; the note thus formed is high or low, according to which hole the lips are over, the lowest sound being at the extreme end of the bow.' The sound holes form the peculiar feature of this rude monochord, together with the principle upon which they are used.

Mussorongo.—A very peculiar form is to be seen in the Ethnographical Museum at Vienna. It was obtained in 1884 by Dr. Josef Chavanne in Kiaba (Mussorongo), south of the mouth of the River Congo. Its native name is *massunda*. It is interesting on account of the manner in which it is played, and, also, particularly from the fact of its counterpart

[1] *Delagoa Bay*, 1891, p. 251.

existing amongst the Bhuiyars of India, as will be described later on. It consists [Fig. 12] of a simple, strongly curved bow of light wood, with a string made of a narrow strip of leaf, bound round at one end of the bow, and jammed in a cleft at the other end, and prevented by a knot from slipping. Towards one end of the bow a number of transverse notches are cut (*a* .... *b*), thirty-six on one side and forty-one on the other. The length of the bow is 61·5 cm. across the curve, and 80 cm. along it. In playing, a stick is scraped up and down the rows of notches after the fashion of a musical rasp, the string being no doubt thrown into vibration. The *notches* present a peculiarity which I have not before noticed in any African musical bows, but they will be seen to be present in the Indian (Bhuiyar) bow described below, a striking parallelism, which may point to real affinity and not mere coincidental resemblance, to homology and not analogy. These instruments are in reality a combination of musical-bow and musical-rasp, the

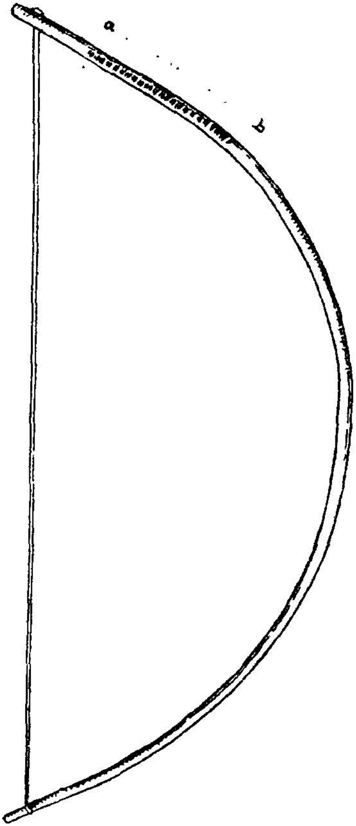

Fig. 12. *Massunda*, musical bow, with notches along edge; obtained by Dr. Josef Chavanne in 1884 at Kiaba (Mussorongo), south of Congo River; Ethnographical Museum, Vienna (No. 21,202). (Sketch kindly sent by Dr. F. Heger.)

latter class of instruments being well represented in Africa.

Goura of Hottentots.—I will only here refer to an instrument which, while it belongs to a great extent to the class of instruments which I am now describing, at the same time presents a marked peculiarity of structure, which separates it somewhat sharply from its kindred. I refer to the *goura* or *gorah* of the Hottentots and Bushmen, which is a kind of musical bow having the peculiarity of being sounded by means of a piece of quill inserted between one end of the bow-string and the end of the bow. This instrument I hope to discuss in detail in another place.

So far I have dealt only with instruments which, although in many cases modified to some extent and showing variations from the form of the original shooting bow, are to all intents and purposes little more than mere bows, whose sound is weak and barely audible to any one besides the player. Certain devices have been described for augmenting the sound, the commonest being that of holding the bow against or between the teeth, or using the hollow of the mouth as a resonator having an adjustable capacity. We have seen also an instance, among the Bongo people, of a resonating cavity made in the ground over which the bow is held; and in some cases the bow may be rested against a gourd placed upon the ground. But in all these cases the resonator in no way forms a part of the instrument itself, being merely an *external* artifice for augmenting the sound. I must now pass to the next stage.

STAGE III.

An important step in advance was gained when a resonator was *attached more or less permanently to the bow*, thus becoming a structural feature of the instrument itself. To this group of musical bows with fixed resonators belong a large number of African instruments, covering a very wide area, chiefly south of the Equator and principally associated with

peoples within the limit of range of the great Bantu stock. The well-known *gubo* of the Amazulu may be considered as the type of the series, as it is the best-known example. The resonant body used almost universally throughout the region where this type of instrument occurs, is a gourd or calabash, usually more or less hemispherical, and fixed to the bow by means of a cord. By pressing the bow against the gourd when playing, the former communicates the vibrations of the string to the latter, which, being hollow, acts as an efficient resonator and increases the volume of sound produced. I will now consider this group in detail, and indicate, so far as I am able at present, its GEOGRAPHICAL DISTRIBUTION IN AFRICA and the VARIOUS MODIFICATIONS under which it occurs.

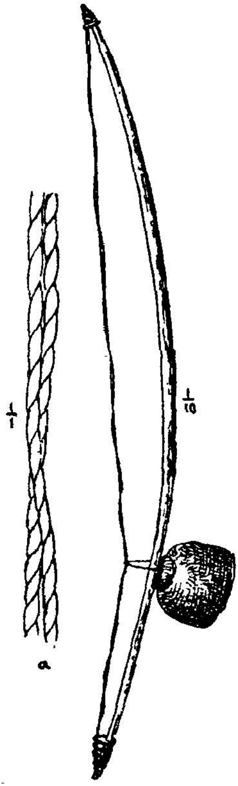

Fig. 13. Musical bow with gourd resonator, length 1·20 m.; *a* double string actual size. Aruwimi River district. Berlin Museum. (From sketch kindly sent by Dr. Weule.)

Congo. — Commencing on the western side of the continent, the musical bow with fixed gourd or calabash resonator occurs certainly as far north as the Congo, very probably still further.

Aruwimi.—In the Berlin Museum is a bow from the Aruwimi district, having a double string [Fig. 13]. This bow was catalogued as an ordinary shooting bow, but the gourd and the bracing string apparently belong to it, and, though merely lying by the side of the bow in the case, should probably be attached as shown in the sketch, which was kindly furnished

me by Dr. Weule. I do not feel sure whether this instrument from so far into the interior should be associated with the Western forms or the Eastern forms of the musical bow.

Angola.—Amongst the natives of Angola and the surrounding districts this type is common. J. Monteiro[1] gives some details of the manner of playing this instrument. He says: 'A musical instrument sometimes seen is made by stretching a thin string to a bent bow, about 3 feet long, passed through half a gourd, the open end of which rests against the performer's bare stomach. The string is struck with a thin slip of cane or palm leaf stem held in the right hand, and a finger of the left, which holds the instrument, is laid occasionally on the string, and in this way, with occasional gentle blows of the open gourd against the stomach, very pleasing sounds and modulations are obtained.'

In the United States National Museum (Cat. No. 151,140) is a musical bow, *hunga*, from Angola with gourd resonator, the string of which is 'held between the finger and thumb and beaten with a slender cane. . . . The tunes are varied by the amount of opening between the player's body and the gourd, and by moving it over different parts of the stomach[2].' This description tallies with that of Monteiro, but the precise musical effect produced by shifting the position of the gourd over different parts of the stomach is a little difficult to understand.

Ba-ngala.—The Ba-ngala (c. 8° 30′ S., 15° 30′ E.) have the gourd fixed near to the lower end of the bow; the manner of tapping the string with a little stick, and of fingering it with the left hand is well shown in a figure given by H. Capello and R. Ivens[3] [Fig. 14].

Ba-lunda.—The Ba-lunda (c. 9°–12° S., 20°–25° E.) have a precisely similar form of instrument, strung with sinews,

[1] *Angola*, 1875, ii. p. 139.
[2] O. T. Mason, *American Anthropologist*, Nov. 1897, p. 378.
[3] *From Benguella to the Territory of Yacca*, i. p. 326; translated 1882.

the string being either struck with a stick or snapped with the fingers[1].

Ki-bunda.—The Ki-bunda (c. 9°–14° S, 13°–18° E.) also use the same and call it *wurumbumba*[2].

Malange.—In the Berlin Museum is a similar bow from the Malange (c. 9° S., 15° E.), collected by Dr. Büchner. In this

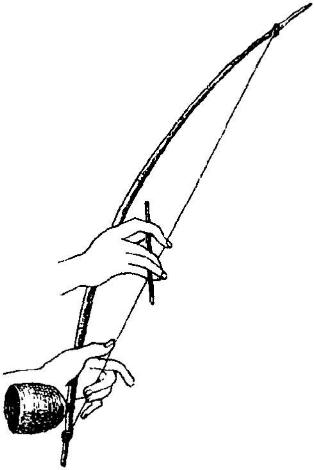

Fig. 14. Native playing on musical bow with resonator, Ba-ngala tribe. (From Capello and Ivens, *From Benguella to Yacca*, translated 1882, i. p. 326; Sampson Low, Marston, Searle & Rivington, London.)

the gourd is placed near the centre of the bow, which is 1·38 m. long, and a small string-bracing draws the bow-string, of cotton, tighter towards the bow [Fig. 15]. The gourd is pressed against the player's chest. The instrument is called *hungo*.

[1] Featherman, *Social History of Mankind*, Nigritians, p. 453.
[2] Ibid., p. 466.

Angola.—Hermann Soyaux[1] speaks of an Angolese instrument called *n-kungu* (evidently a variant upon *hungo*). Between the ends of a weakly bending switch, about 1·20 m. long, is stretched a cord twisted from plant fibre, and towards the thicker end the string is drawn tightly towards the bow. A gourd resonator is added towards one end. The player holds the *n-kungu* upright in the left hand, so that the gourd rests on the left hip, and presses with the forefinger of the left hand harder or softer upon the string, whilst he causes it to vibrate with a small stick held in the right hand.

South of this region, through the Herero and Damara country, I have not found hitherto that the gourd or other resonator is found; but more southerly still, and to the eastward, we come to the home *par excellence* of this type of musical bow. It is but sparsely found in the great Koi Koin regions in the south-west corner of the continent, and it has probably been introduced there only as an instrument borrowed and adopted from the adjoining Bantu peoples. *Gubo* or *gubu*, *hade* or *hadi*, appear to be the common names for this instrument amongst the Kaffir, Zulu, and some other Bantu tribes in South Africa. In the *Catalogue of the Natal Court of the Colonial and Indian Exhibition*, London, 1886, p. 54, we find *ugubu* given as the Kaffir name of the gourd or calabash resonator, and *uti logubu* for the bow and string of a musical bow. The instrument is played upon by both sexes.

Kaffir and Zulu.—The bow in some [Fig. 16] is of nearly uniform thickness throughout, while in others, as in a specimen which formed the commencement of General Pitt Rivers' series of musical bows [Fig. 17], it tapers from below upwards. The string may be of vegetable fibre, hair from the tails of oxen, or of raw-hide, and is attached either by having its ends wound round the ends of the bow and knotted, or passed over notches at the bow ends and then fastened [Fig. 16], or may combine two methods by being fixed

[1] *Aus West-Afrika*, 1873-6, part ii. pp. 176, 177.

through a perforation at the lower end, and over a notch at the thin end of the bow [Fig. 17]. The resonator, usually

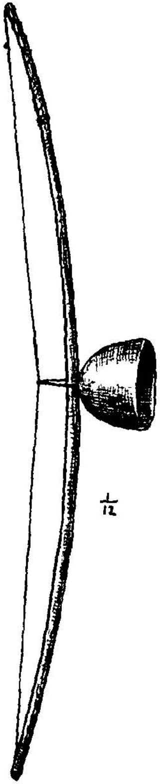

Fig. 15. *Hungo*, musical bow with resonator, Malange tribe, length c. 55½ in. Obtained by Dr. Büchner. Berlin Museum.

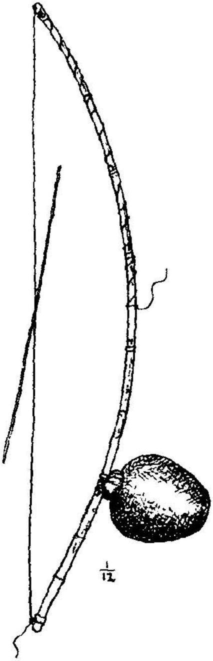

Fig. 16. *Hade*, musical bow with resonator and striker, South Africa; length 45 in. in straight line. Obtained by *F. S. Lewis, 1890.* University Museum, Oxford.

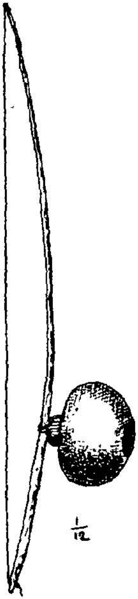

Fig. 17. *Gubo*, musical bow with resonator, length 42½ in.; Natal; obtained by H. Jackson. Pitt Rivers' Collection, University Museum, Oxford.

of gourd, varies in shape. Some are nearly spherical with but a small aperture, others are more or less oval in out-

line, others nearly hemispherical with a very wide opening. A South African specimen in the British Museum has a resonator made from an entire bottle-gourd, fastened by strings passing round the constricted portion [Fig. 18]. Some

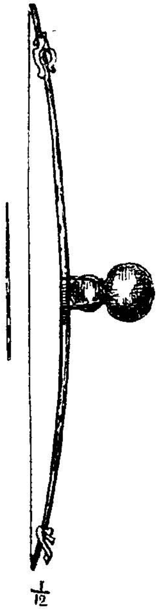

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Fig. 18. Musical bow with bottle-gourd resonator and porcupine-quill striker, length 38¼ in.; South Africa (probably Natal). Noldwritt Collection, British Museum.

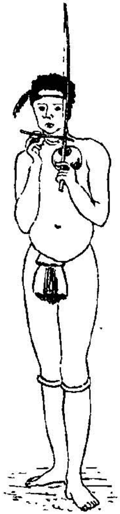

Fig. 19. Kaffir playing upon *gubo*. (From G. Fritsch, *Eingeborenen Süd-Afrikas*, fig. 7.)

Kaffir specimens have the resonator made from the 'Kaffir Orange,' a large and a small fruit joined together, giving a shape like a bottle-gourd, and resembling the resonators of some of the South African forms of *marimba* or xylophone.

The resonator in some is fixed at or near the centre of the bow, in others towards the lower end. Between it and the bow a pad of cloth strips or leaves is very usually fixed.

In playing, the Kaffir and Zulu performers usually press the gourd against the chest, holding the bow with the left hand in a nearly vertical position. The string is tapped with a small stick, straw, porcupine-quill or other suitable plectrum, and the notes can be varied to some extent by applying the fingers of the left hand to the lower portion of the string [Fig. 19[1], representing a Kaffir with *gubo*]. The thumb and forefinger are chiefly employed for this duty. Mrs. R. Monteiro[2], in describing the musical bow of the Kaffirs of Delagoa Bay, which has a string and a bracing-loop of brass wire, says: 'When played, the bow is held in the middle by the left hand, some of the fingers being on each side of the connecting wire securing the gourd, which is pressed against the chest of the player. The long wire is then tapped alternately on each side of the loop with a little cane, producing a minor third; but if the backs of the fingers are slightly raised so as to touch the wire a different note can be made' [Fig. 20]. An ingenious method of varying the notes is illustrated by Angas[3] in one of his fine illustrations of Kaffir life scenes [Fig. 21]. A small loop or ring is passed over the bow-string, and through this the forefinger of the left hand (which holds the bow near the centre) is passed. By extending or drawing in the finger, the tension of the bow-string is relaxed or increased and so the note is lowered or raised. This is an improved adaptation of the fixed string-bracing of the Damara and so many other musical bows in Africa. It also answers the same purpose as the notched stick described in connexion with the specimen shown in Fig. 11, but in a more handy and efficient manner.

Illustrations of Kaffir and Zulu performers on the *gubo* are given by the Rev. J. Shooter[4], Angas[5], J. Mackenzie[6], and

[1] From G. Fritsch, *Eingeborenen Süd-Afrikas*, p. 20, fig. 7.

[2] *Delagoa Bay*, 1891, p. 250.

[3] *The Kaffirs Illustrated.*

[4] *The Kaffirs of Natal*, p. 238.

[5] *The Kaffirs Illustrated*, pl. xxv.

[6] *Ten Years North of the Orange River*, p. 328.

others; figures of the instrument itself, in addition to those I have given, may be seen in works by J. G. Wood [1], W. C. Holden [2], G. Fritsch [3], and elsewhere. The instrument is, moreover, very commonly to be seen in museums.

Fig. 20. Kaffir of Delagoa Bay playing upon *gubo*. (From R. Monteiro, *Delagoa Bay*, 1891, p. 233; George Philip & Son, London.)

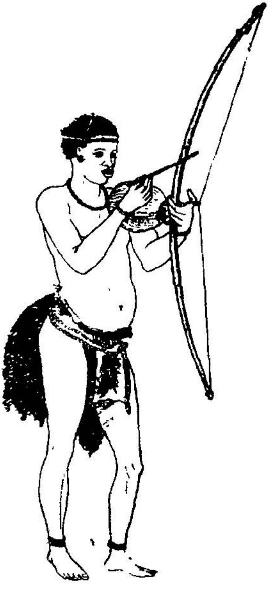

Fig. 21. Zulu playing upon *gubo*, using loop to vary the tension of the string. (From Angas, *The Kaffirs Illustrated*, 1849.)

Basuto. — Of the neighbouring people, the Basuto are described as having the *thomo*, *tumo*, or *tamoo*, an instrument precisely similar to the *gubo* of the Amazulu. A Basuto sitting down and playing upon one of these is figured by

[1] *Natural History of Man*, i. p. 231.
[2] *Past and Future of the Kaffir Races*, p. 168.
[3] *Eingeborenen Süd-Afrikas*, p. 67.

the Rev. E. Casalis[1], who mentions that it is 'held by one end in the left hand in such a manner that the forefinger and thumb are free, and can touch the string at pleasure. In the other hand is a slight wand, with which the performer strikes the cord . . . the sound . . . can be varied to a certain degree by touching the cord at different heights.' In this case [Fig. 22] the gourd is not pressed against the chest, but is turned away from the performer, the string being towards him, the advantage of the resonator being reduced to a minimum thereby. F. Christol[2] gives a very good figure of a Basuto girl playing on the *thomo* [Fig. 23], showing the gourd pressed against the breast and the fingering of the string; there is no string bracing the bow-string to the bow. There is a Basuto specimen in the Museo Kircheriano at Rome.

Fig. 22. Basuto player upon the *thomo*. (From Rev. E Casalis, *The Basutos*, 1861, p. 149; J. Nisbet & Co., London.)

Bechuana.—Chapman[3] says that the Bechuana have 'a musical bow with a hollow calabash attached to the back of one end, on which is stretched a twisted string made of sinews, on which the performer strikes with a thin stick, modifying the tones with his fingers by running them along the string. This,' he adds, 'is a selfish kind of music, intended more for their own gratification than for an audience, who hear scarcely anything of it, while the performer, having one end of the bow constantly between his teeth, the sounds vibrate powerfully to his own ears, and are lost to the bystanders.' It would seem to be unnecessary to hold the bow in the teeth when a resonator is attached for use to the bow, but possibly the Bechuana may have adopted the bow with calabash from a neighbouring tribe, without entirely appreciating the advantages of the resonator, and have still adhered to the earlier method of playing the bow, in vogue

[1] *The Basutos*, p. 149. [2] *Au Sud de l'Afrique*, Paris, 1897, p. 83.
[3] *Travels in the Interior of South Africa*, i. p. 271.

with the simple bow without resonator; or perhaps the calabash is only made use of when the desire is to give

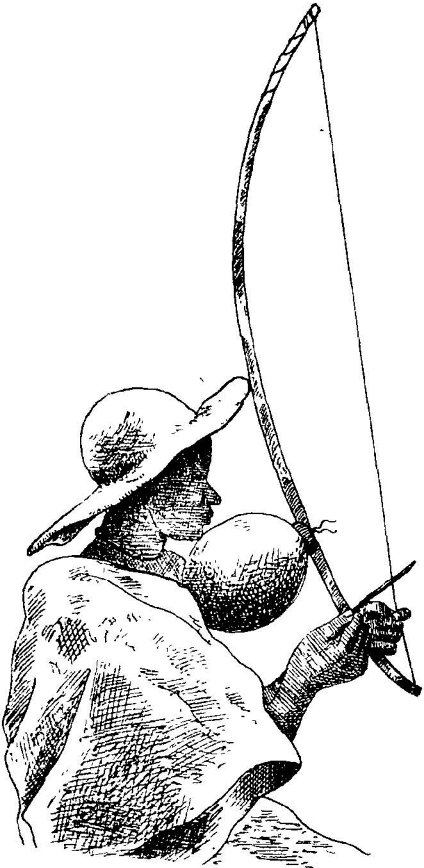

Fig. 23. Basuto girl playing upon the *thomo*. (From F. Christol, *Au Sud de l'Afrique*, 1897, p. 83; Berger-Levrault & Cie., Paris.)

bystanders the benefit of the performance. T. Baines, the traveller, also mentions having seen the Bechuana musical

bow at Coqui's Drift on the Vaal River, in a letter to the Rev. J. G. Wood [1]. J. Theodore Bent [2] met the same instrument in the country south of the Shoshong, Bechuanaland, and describes the strains produced as 'plaintive if not sweet.'

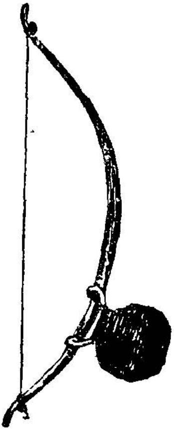

Fig. 24. Musical bow, Manicaland. (From the *Daily Graphic*, Dec. 12, 1892.)

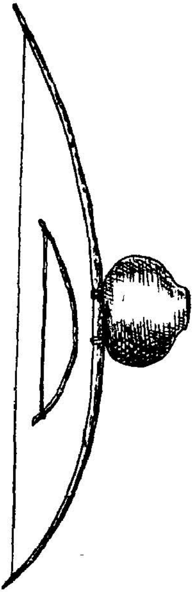

Fig 25. Ordinary musical bow of *gubo* type, with smaller bow (30 cm. long) for sounding the bow-string. Bushman, South Africa. Ethnographical Museum, Copenhagen. (From sketch kindly supplied by Dr. K. Bahnson.)

Batlapin.—In the Vienna Museum is a musical bow of the usual Kaffir type, with a string of twisted hide, from the Batlapin on the Harts River.

Manica.—A Manicaland example [Fig. 24] was figured in

[1] *Natural History of Man*, i. p. 333.
[2] *Ruined Cities of Mashonaland*, part i. chap. i. p. 20.

the *Daily Graphic*[1]: 'The native musician struck the string of the bow with a piece of reed, making play with the fingers that held the bow, and producing three sounds only, which he repeated over and over again to the time of an Irish jig. To this tune the other boys danced uncouthly but with great delight.'

Hottentots and Bushmen.—This type of instrument has been adopted by the Hottentots, and also by the Bushmen in South Africa. It is mentioned by Chapman[2] as a favourite instrument with the Bushmen. In the Ethnographical Museum at Copenhagen is one of these musical bows, *tomo* (Cat. No. 175 ö) with central gourd [Fig. 25], furnished with a small bow, like a primitive violin bow, for sounding the string. Dr. Kristian Bahnson, in answer to my inquiries, kindly furnished[3] me with the following note upon this specimen: 'The instrument in question is an ordinary South African *gubo*, but with a small bow, made of a small branch (30 cm. long) with a string of horse-hair, very rudely made. It is quite impossible playing with the bow to produce any tone. I believe either that the bow is only a toy, made as an imitation of a violin bow, or that the whole instrument is perhaps an imitation of a European violin. I have read somewhere (I believe by Kahn) that the Hottentots and Bushmen imitate the violin and are able to play European melodies upon these instruments. Our instrument is perhaps such an essay which has failed. At all events a *gubo* played with a bow is not an original Bushman instrument.' It is more than probable that this mode of playing was adopted from a European source, as the use of a bow, after the fashion of a violin bow, is not characteristic of native South-African music, although further to the north it is well known. Possibly the string of the Bushman bow should be *wetted* or otherwise induced to 'bite' upon the larger bow-string.

[1] December 12, 1892.

[2] *Travels in the Interior of South Africa*, i. p. 271.

[3] Aug. 13, 1894.

Mashona.—The people of Mashonaland have the bow with gourd resonator, and play upon it after the usual fashion, the native name for the instrument is *wedsa*. It has been described by O. T. Mason[1].

Zambesi.—Coming to that important natural boundary, the Zambesi, we find that the musical bow with gourd resonator extends far away to the north of this river. F. Oates[2] met on the river Semokur, in Matabeleland, a boy from the Zambesi who played on 'the string of a bow to which a gourd was attached.'

Mozambique.—Two bows with gourds, of the usual Kaffir shape, from the Hinterland of the Mozambique Coast, obtained by Dr. Dauber in 1889, are in the Berlin Museum. A Mozambique specimen, *bobre*, is in the United States National Museum (Cat. No. 94,661). It is described by O. T. Mason[3] as having 'a round stick for the bow 80 inches long, the gourd resonator has a diameter of 4¾ inches and a height of 4 inches. . . . The sound produced is somewhat modified by varying the opening between the lower edge of the gourd and the player's body.'

Wamakua.—Further to the north of the Zambesi, the Wamakua have a bow of *gubo* type, having the string braced to the bow near the centre. (A specimen is in the Berlin Museum, c. coll. E. Hildebrandt.)

Wagogo.—The Wagogo (c. 6°–7° S., 34°–36° E.) have a musical bow of similar type[4]. The fingers, it is said, are used in making the string vibrate.

Wanyamwesi.—The neighbouring Wanyamwesi also use the instrument. A specimen in the Berlin Museum is 1·03 m. long, and has a little stick, 0·25 m. long, for striking the string. It is further furnished with a special appliance in the

[1] *American Anthropologist*, x. p. 379, 1897.
[2] *Matabeleland*, p. 143.
[3] *American Anthropologist*, x. p. 379.
[4] Featherman, *Social Hist. of Mankind*, Nigritians, p. 97.

shape of the small end of a gourd [Fig. 26]. It is worn as a finger-stall upon the middle finger (? of the left hand), like a thimble, and is touched on the gourd in accompaniment to the strokes of the stick[1].

A specimen of *gubo* type, obtained in Bagamoyo near Zanzibar in 1886, Dr. Heger tells me was probably brought from the interior of East Africa [Fig. 27]. It has a central string-bracing.

Lake Regions.—R. F. Burton in his description of the natives of the Lake regions of East Central Africa[2], refers to 'a small bow-guitar, with an open gourd attached to the part about the handle: sometimes the bow passes through the gourd. This instrument is held in the left hand, whilst the "tocador" strikes its single cord with a thin cane plectrum about one foot long. . . . The gourd is often adorned with black tattoo, or bright brass tacks, disposed in various patterns, amongst which the circle and the crescent figure conspicuously.'

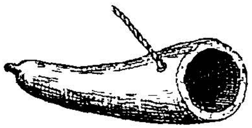

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Fig. 26. Thimble of gourd, worn upon the middle finger and tapped upon the gourd resonator of a musical bow, as an accompaniment, Wanyamwesi. Berlin Museum. (From sketch kindly made for me by Dr. Weule.)

Madagascar.—In the Great African Island, Madagascar, with its curiously mixed Bantu-Negroid and Malayan culture, the occurrence of a musical bow of typical Bantu form is recorded by Messrs. F. P. L. Pollen and D. C. Van Dam[3], and a figure is given [Fig. 28]. The bow tapers towards the ends, and is furnished with a gourd resonator below the centre, and a string-bracing between bow and bow-string. The native name given for it is *bobre*, which is the same as

[1] Note from Dr. Weule.

[2] *Lake Regions of Central Africa*, 1860, ii. p. 293.

[3] *R. s. l. Faune de Madagascar*, 1861, Leiden, part i. Rel. de Voyage, liv. i. pl. viii. fig. 11.

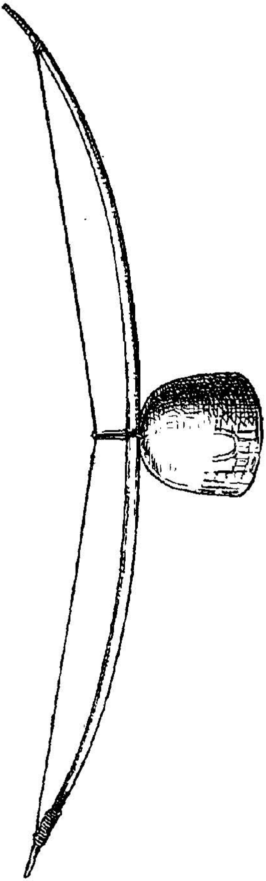


Fig. 27. Musical bow with resonator obtained in Bagamoyo, near Zanzibar, but probably from the interior; length c. 56½ in. Vienna Museum. (Sketch kindly sent me by Dr. F. Heger.)

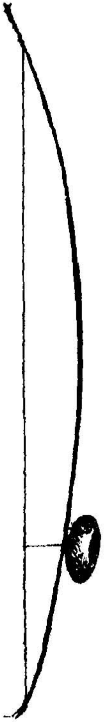


Fig. 28. *Bobre*, musical bow with resonator; Madagascar. (From F. Pollen and D. C. van Dam, *R. s. l. Faune de Madagascar*, 1861, part i. Rel. de Voyage, liv. i. pl. viii. fig. 11; E. J. Brill, Leiden).

that given by O. T. Mason for a Mosambique instrument referred to above. Specimens of similar nature from Madagascar are in the Trocadero Museum at Paris. Professor Mason[1] also mentions a Madagascar type, *zedzilava*, the 'bow a cylindrical stick, to which is tied two-thirds of a gourd for a resonator; string, a three-ply cord of vegetable fibre; bow held in left hand and the open part of the gourd pressed against the player's chest. In his right hand is held a small rattle of palm leaf; also a slender stalk of split cane, with which he strikes the string, its note blending with the sound of the rattle.' A performer upon a Madagascar musical bow, *diclilavy*, is shown in Fig. 29, a rough sketch from a photograph kindly sent to me by Mrs. J. C. Brown. The details correspond exactly with Professor Mason's description. The bow-string in this example is braced very low down with a string loop which is attached to the gourd.

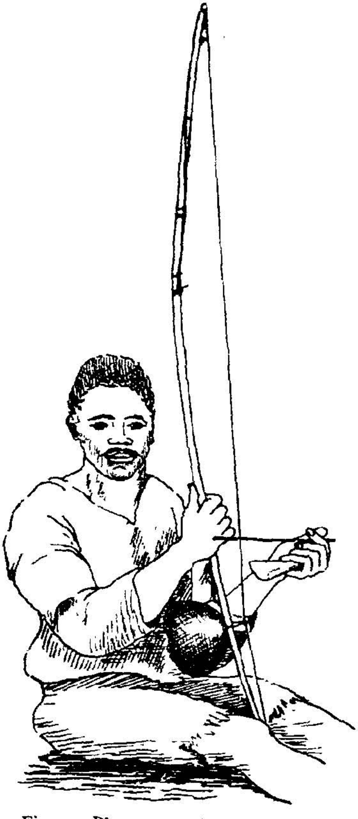


Fig. 29. Player upon the *diclilavy*; Madagascar. (Sketch from photograph kindly sent me by Mrs. J. C. Brown.)

[1] *American Anthropologist*, x. p. 379.

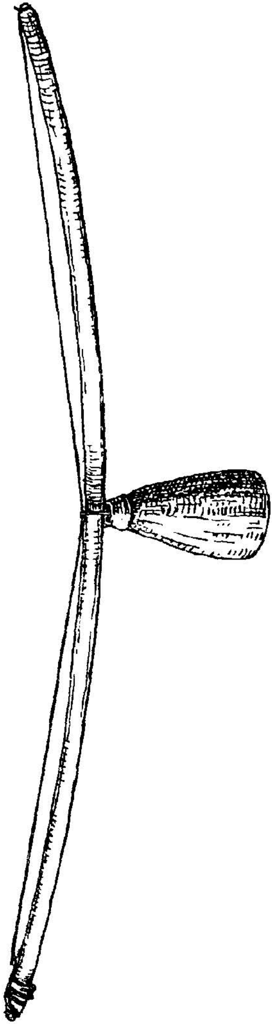


Fig. 30. Musical bow with resonator, length c. 68¾ in.; Island of Réunion. From the collection of the Ministry of Marine and the Colonies exhibited at the Universal Exhibition in Paris, 1878. Vienna Museum. (Sketch kindly sent by Dr. F. Heger).

Réunion Island.—From the island of Réunion, further eastward, comes a similar musical bow which is in the Vienna Museum [Fig. 30]. The bow, of light yellow wood 171 cm. long, is fitted with a stout brass wire for a bow-string, fastened round the ends, and a resonator, 20 cm. high, made from a monkey-bread-fruit shell, cut open below, set in a little conical cap placed between it and the bow. The bow-string is braced to the bow near the centre by a brass wire which holds the resonator in place.

Chagos Islands. — In the Chagos Islands, far away to the north-east, in the centre of the Indian Ocean, G. C. Bourne tells me that he saw Malagasys playing upon the musical bow.

The examples from the islands in the Indian Ocean, Madagascar and the others, are obviously direct derivatives from the Bantu regions of the African mainland, and are therefore taken with those from the continent itself.

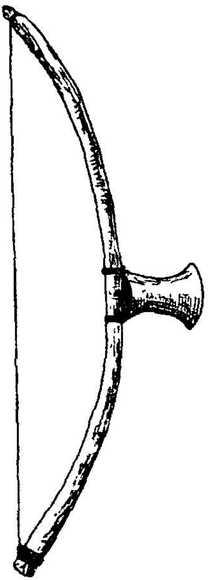


Fig. 31. *Degal*, cotton-cleaning bow with gourd cylinder attached; North-East Galla. (For comparison with musical bows.) Vienna Museum.

Galla cotton bow. — There is an African implement to which I must refer here, which, although it is not actually a musical bow, is yet so obviously very nearly related to it, as to render it desirable not to pass it over in dealing with musical bows. This is the cotton-cleaning bow, *degal*, of the North-East Galla tribes, not very far inland from the Gulf of Aden. A specimen [Fig. 31] is in the Vienna Museum, and consists of a short, stoutly-made bow of wood with tightly stretched string, and attached by a double lashing to the centre is a cylinder of bottle gourd, expanding towards the open ends.

Although this instrument is used for cleaning cotton, its close resemblance to the musical bows with their gourd resonators is worthy of remark. It is more than probable that the use of this implement has been derived from India, and, in fact, associated with it in the museum is a cotton-winder of a well-known and characteristic Indian type; but, in view of the many resemblances observable between the musical bows of Africa and India (instance the bow with the rasp-edges from West Africa) this example is worthy of mention. I am not aware of the implement occurring in India in precisely this form, the usual type being considerably more elaborate; and it is possible that, in adopting the implement in principle, the African cotton-cleaners may have adopted the form of the musical bow, although I do not know of this instrument so far to the north-east of Africa.

In a future paper I hope to describe the various African instruments of music which have, along diverging lines of descent, been apparently derived from the simple forms of musical bow such as those already described, but for the present I must adhere to the primitive types which may be comprised under the term Musical Bow. In reviewing the many instances recorded from Africa it seems to me to be clear that, in spite of the very wide area which they cover in that continent, they form one morphological group, within which may be seen numerous types resolvable into three main stages of development towards higher forms. We have seen the ordinary shooting bow used temporarily as a musical monochord, the absolute origin of a long line of stringed instruments; we have seen the bow gradually emancipating itself from warlike or hunting duties and becoming a musical instrument pure and simple, if still crude and somewhat inefficient; we have also seen it variously modified for its new function; and, finally, we have noted the addition of a resonator forming part of the instrument itself. Here I must leave it for the present, in order to give a sketch of the geographical distribution of simple types of musical bow in other regions of the world, with a view to furnishing

materials for the consideration of the question whether this instrument originated in a *single* centre, and was dispersed thence in different directions, or whether it was independently invented in *two or more* centres.

America and West Indies.—The NEW WORLD may first claim our attention.

Amongst the several musical instruments of African origin which accompanied the involuntary immigration of the African Negro into the New World, and have there taken firm root as the instruments of an extensive Black population, it is not, perhaps, surprising to find the musical bow. The question which is now much under discussion, as to whether or not the musical bow is an indigenous American instrument, pre-Columbian, need not for the moment occupy our attention, as I shall have occasion to refer to this matter a little later. I do not think that it will be doubted that the musical bow as seen in the hands of the immigrant Black settlers, is traceable to any other source than the continent whence the people themselves were derived. They had little enough reason to adopt any indigenous instrument of the kind, supposing such to have existed, since they had come from a region in which the musical bow was thoroughly well known and much appreciated, and in which it existed not under one form alone, but many, ranging from the most primitive to the more elaborate types. Moreover, the forms of the instrument as we find them amongst the New World Negroes, are for the most part completely African in type. It is found in company with the *marimba*, *sansa*, and other instruments of African origin. The Negro in America and the West Indies is, I am told, extremely fond of this instrument, and will often, *faute de mieux*, improvise a small example from a little curved stick with a piece of elastic for the string, and will amuse himself for hours with the music elicited by twanging his miniature musical bow.

West Indies.—The instrument was found in a very simple form in the *benta* of the Negro slaves of the West Indies,

as described by J. G. Stedman[1]. It consisted [Fig. 32] of a slender 'branch bent like a bow by means of a slip of dry reed or *warimbo*, which cord when held in the teeth

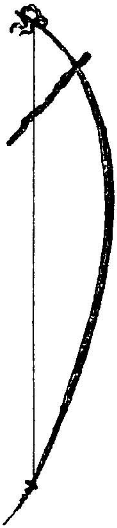


Fig. 32. *Benta*, simple musical bow with striker, *warimbo*; West Indies (Surinam). (From Stedman, *Narrative of a Five Years' Expedition against the Revolted Negroes of Surinam*, 1813, ii, pl. fig. 12).

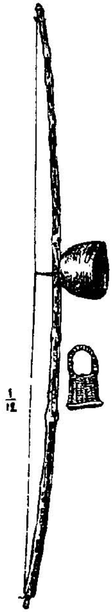


Fig. 33. Musical bow with resonator, length 42 in., with wicker rattle held and shaken as an accompaniment; Negroes of Bahia. British Museum.

is beaten with a short stick, and by being shifted backwards and forwards sounds not unlike a jews-harp.'

[1] *Expedition against the Revolted Negroes of Surinam*, ii. p. 298, and plate, fig. 12. 1772-7. London, 1813.

Bahia, Brazil.—The Blacks at Bahia on the Brazilian coast play upon a bow exactly similar to the characteristic South African form, that is, a bow 3 feet 6 inches long, with a hemispherical gourd attached towards the centre by a small string loop, which also braces the bow-string to the bow [Fig. 33]. The bow is held in the left hand and the gourd is pressed against the body; the string, which is of wire, is struck with a small stick held between the right fore-finger and the thumb. A small wicker rattle is hung upon the other three fingers and gives a rattling accompaniment (compare the account of the Madagascar *zedzi-lava* quoted above). The above description is of a specimen presented to the British Museum by Mr. J. Wetherall.

Lencas, Honduras.—Professor O. T. Mason[1] described a musical bow used by the Lencas of Honduras, called a *bumbum*—the name itself recalls the *wurum-bumba* of the Ki-bunda of West Africa, and is doubtless onomatopoeic. 'It is a bow strung. Near one end a cord is attached to the bow-string and drawn inward so as practically to make two strings. This short cord passes through a small gourd on the back of the bow and holds it there. The effect of this gourd is to give resonance. Frequently a larger half-gourd is inverted on the ground, and the lower end of the instrument rests on this while it is being played.'

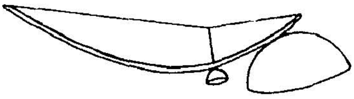


Fig. 34. Musical bow with gourd resonator, resting upon a larger gourd for being played upon; used by the *huleros* of Mosquitia. (From E. W. Perry, The Home of the Hulero, *Outing Magazine*, Feb. 1894, p. 357).

Mosquitia.—This description tallies exactly with one by Mr. E. W. Parry[2], who describes and figures an instrument from Mosquitia, in use amongst the *huleros* or rubber-gatherers. A boy, he tells us, 'tapped with a short, hard

[1] *American Anthropologist*, ii. p. 158.
[2] *Outing Magazine*, Feb. 1894, p. 357; The Home of the Hulero.

stick on the brass string of a tough and heavy bow, one end of which rested on a big calabash [Fig. 34]. At a point one-third of the bow's length from the end which rested on the calabash, a short piece of wire passing through a small calabash on the back of the bow, drew the bow-string in toward the bow itself. . . . The big calabash gave a hollow, drum-like sound to the notes caused by the vibrations of the wire string. This instrument, named *carimba*, may have had its origin among peoples who were accustomed to the twanging of the bow-string.' The truth of this latter remark is made clear by a study of the origin of the African musical bow as given above. The native name of the instrument of the *hulero* has a strongly African flavour.

San Salvador.—In a village on the Balsam coast, San Salvador, Dr. S. Habel[1] met with a musical bow, which he describes as follows: 'Their national instrument is called *carimba*. It consists of a reed five feet long and about an inch and a half thick. A brass wire is attached to the two ends, by which the reed is slightly bent. At a third of its length the wire is tied by a string to the reed, and at the same place is fastened to the opposite face of the reed an inverted *jicarro*, an oblong cup made of the small kind of calabash fruit, with its opening downward. With a splint of a similar reed a foot long, the two parts of the wire are touched, giving only two distinct sounds, which are varied by changing the time and rhythm. At the same time the opening of the *jicarro* is more or less closed by the palm of the left hand, which produces the melody desired.'

Guatemala.—Dr. Carl Sapper[2] observed the instrument among the Kekchi of Guatemala, and regarded it, as also the *marimba*, as of African origin. He gives the native names of the instrument as *apachè* or *marimbachi*, also *caramba*, and describes it as a light wooden bow, about six feet long, strung with a thin creeper or with a string.

[1] *Smithsonian Contributions to Knowledge*, xxii. 1878, p. 31.

[2] *Das nördliche Mittel-Amerika*, 1897, Brunswick, p. 312.

A bracing loop draws the bow-string to the bow towards the middle. The bow is held to the mouth and the string is struck with a small stick. In this case there is no resonator.

Nicaragua.—In D. G Brinton's *The Comedy Ballet of Güegüence*[1] we read that the Nicaraguan *quijongo* [Fig. 35] 'is a stringed instrument, made by fastening a wooden bow with a stretched cord over the mouth of a jar. A hollow reed, about five feet long and an inch and a half thick, is bent by a wire attached to the ends. This wire is then tied to the reed at one-third the distance from one end, and, at the same point, on the convex surface of the reed, a gourd, or thin earthen jar, is fastened, with its mouth downward. The notes are produced by striking the two sections of wire with a light stick, and at the same time the opening of the jar is more or less closed by the palm of the left hand, thus producing a limited number of notes, which are varied by changing the intervals. Among the Nahuatl tribes of the Balsam coast, this is called the *carimba*. It appears to have been an aboriginal invention, although some writers have asserted that the Aztecs had no knowledge of any stringed instrument.'

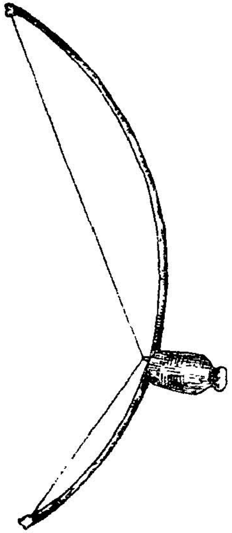


Fig. 35. *Quijongo*, musical bow with resonator (From Brinton, *The Comedy Ballet of Güegüence*. Philad. 1883. p. xxxvi.)

Costa Rica.—The same instrument is described by J. F. Ferraz[2] in the following terms: '*Quijongo* = instrumento musical formado de un arco, sujeto al fondo de una orza de barro, en cuya boca se pone la mano izquierda para producir

[1] Philadelphia, 1883, p. xxxvi and illustration.

[2] *Nahuatlismos de Costa Rica*, 1892, p. 106.

los varios sonidos tapando ó destapando más ó menos, y de extremo á extremo del arco una cuerda tirante sujeta á aquél á los dos tercios de su extensión. Como este monocordio se toca pulsando la cuerda sucesivamente en varios puntos, pensamos que su nombre viene de un adjetivo verbal en *qui* de *quetzoma* = morder, dar mordiscos, punzadas, pellizcos, que parece derivado de *quetzontli* = cabellos largos sobre el occipucio, modo antiguo indigena el cual se ha usado hasta en este siglo, especie de coletilla, que se mandó aquí suprimir por un decreto del Congreso. Esa última palabra se compone de *quechtli* = cuello + *tzontli* = cabello. La etimología es muy dudosa.' I do not wish to enter into the etymological question, and will merely agree heartily with the author's last remark.

In spite of Dr. Brinton's belief in the *quijongo* as an indigenous aboriginal invention, his description and his sketch of the instrument show how absolutely identical this instrument is with the most common type of African musical bow with gourd resonator and bracing-string, and, although one meets with instances of strange coincidences of this kind, we may well hesitate before accepting his view, particularly when we consider that this identical type of instrument must in any case have been introduced into the West Indies and Central America by the imported Black slaves from Africa. It would have been indeed a strange meeting of two instruments independently evolved, whose development had resulted in such perfectly identical forms as to render it possible for either to be mistaken for the other!

Maya, Yucatan.—There is an interesting description of 'A primitive Maya musical instrument' by M. H. Saville[1], who saw it in 1890–1, some Mayas accompanying their songs upon an instrument called *hool*, which 'is made by stretching a piece of rope-like vine, called *ohil*, between the two ends of a pliable piece of wood, making a bow about two feet in length. One end of this bow is placed near the face, about one-third of the distance from the end,

[1] *American Anthropologist*, Aug. 1897.

so that the mouth covers but does not touch the string, forming a resonator. Between the string and the bow a piece of wood is placed in such a manner that it may be pressed against the string or relaxed at will. The tones are produced by tapping on the string, thus producing a sound somewhat resembling that made in playing a jews-harp, but more agreeable to the ear. The different notes are produced by the pressure or relaxation of the stick upon the string and by the opening and partial closing of the mouth over the same. . . .' Here again I would point out that, in considering whether this is really a *primitive* Maya instrument, of indigenous origin, we should not lose sight of the fact of its being commonly seen in Africa, and even the method of varying the tension of the string, and so its note, by means of the pressure of a stick graduated at will, is in practice in South Africa, as has been seen in the case of the simple bow from Zululand in Mrs. J. C. Brown's collection [Fig. 11].

Mexico (ancient).—The question whether the ancient inhabitants of Mexico were acquainted with a musical bow, or indeed with any form of stringed instrument, is of considerable interest. They undoubtedly had a variety of musical instruments, wind- and percussion-instruments, and one might well look to finding stringed-instruments also in the musical category of a people whose condition of culture was in many ways so highly developed. But, to be satisfied upon this point we must have some proof of their existence. I lately received through the kindness of its author, Mr. M. H. Saville, a paper upon 'The Musical Bow in Ancient Mexico[1],' in which he reproduces figures representing a pre-Columbian orchestra, copied from a Mexican codex, *Le Manuscrit du Cacique*, published by H. de Saussure in 1892. In this may be seen six performers playing respectively upon a *teponaztli*, a skin-covered drum, two wind-instruments of uncertain nature, a rattle (presumably), and another instrument. This

[1] *American Anthropologist*, Sept. 1898, pp. 280–4.

latter is confidently stated by Mr. Saville to be a musical bow, but it is not easy to see upon what he pins so strong a faith in this interpretation of the figure. The resemblance to a bow is very slight and superficial, it seems to me, and I cannot feel disposed to accept this interpretation of the nature of this instrument, without some more convincing proof. As Mr. Saville describes the figure to us, it 'represents a seated person with a bow held by the left hand, the string being pressed against the arm near the elbow, while in the left hand is held a forked stick, undoubtedly for use in twanging the tightened cord of the bow.' Now, I would suggest that the worst possible way of holding a bow for use as a musical instrument, would be with 'the string being pressed against the arm near the elbow;' it would entirely deaden all vibration and therefore all musical sound. That the figure is represented as *playing upon* whatever his particular instrument may be, may be assumed from the fact of all his associates being shown in act of playing, and playing vigorously, upon theirs. One hardly likes to picture that one musician vainly essaying to elicit music from his bow, while he is himself rendering this impossible by his clumsy manner of holding his instrument. The form of the 'plectrum' is unusual for any stringed instrument, its forked end seems to have no *raison d'être*. Is the instrument a musical bow at all? I think not. I am inclined to think that further evidence must be sought for, before we can regard the pre-Columbian origin of this type of instrument in Central America as finally proved. Mr. Saville remarks that this is the only instance with which he has met in searching through the Mexican codices. I have since, through the kindness of Mrs. Nuttall, seen a *coloured* copy of de Saussure's reproduction of the codex, and am the more convinced that nothing of the nature of a musical bow is represented.

Mexico (modern).—The musical bow in a modified form certainly is to be found in Mexico of to-day amongst the mixed Spanish and aboriginal inhabitants. Mr. O. H. Howarth

exhibited at the Anthropological Institute in London, April 14, 1896, a specimen [Fig. 36] which he subsequently kindly gave to me. The bow is of reed, ornamentally bound round

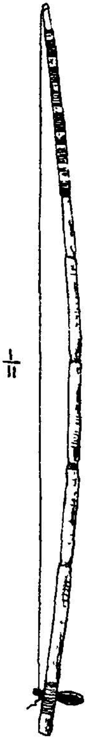


Fig. 36. Musical bow with tuning-peg, length 45½ in.; Patzcuaro, Michoacan, Mexico. Obtained by O. H. Howarth. Oxford University Museum.

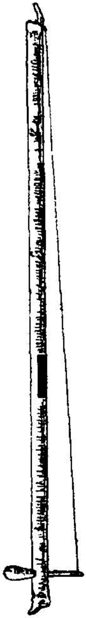


Fig. 37. *Harpa*, straight form of musical bow with tuning-peg; Rio Verde district, Mexico. Peabody Museum, Cambridge, Mass.

with coloured wool at the upper end. The fine string is attached to the upper end by being tied round it, while it is attached to a tuning-peg passing through the lower end

of the bow. The bow is held in the teeth in playing, after the fashion with so many African musical bows. The tuning-peg is an innovation borrowed, no doubt, from higher-class instruments. This specimen was obtained in Patzcuaro, Michoacan.

An instrument of very similar form, though showing further modifications away from the primitive-bow type, is in the Peabody Museum, Cambridge, Mass. It was collected in the Rio Verde district, Mexico, and is called *harpa* [Fig. 37]. In this a *straight* length of reed replaces the curved bow, one end being notched for the attachment of the string, which is of twisted gut. The other end of the string is attached to a tuning-peg of sufficient length to cause the string to stand well away from the 'bow,' and so obviate the straightness of the latter. A new feature is seen in this monochord in the shape of a rectangular sound-hole cut through the reed towards the centre, so that the hollow of the reed may act as an efficient resonator. This does not seem to be known in Africa, unless we may regard the Kaffir specimen with sound-holes quoted above from R. Monteiro's description as a possibly related form. This instrument is also held in the teeth.

California.—It would appear that this type of monochord spread into California, as Professor Mason[1] describes a specimen in the U. S. National Museum, under the native name *mawahellis*. 'A tube-reed with a longitudinal half-section of the upper joint removed and a hole made in the lower end for a vertical tuning-peg. String of gut.'

New Mexico.—The same authority[2] mentions one from New Mexico (Pueblo), *thlin-thli-no-me*. 'A round stick with a rude tuning peg through one end. One string, supposed to be struck with a small stick.' (U. S. Nat. Museum.)

South America.

Central Brazil.—The southern regions of the New World do not furnish many types of musical bow, but the very few instances which are known to me are of interest.

[1] *American Anthropologist*, x. p. 380, 1897.

[2] Ibid.

Professor Mason[1] describes the *umcunga* of Central Brazil as a 'bow of rattan, string stretched from one end to about two-thirds its length and tied. Beaten with a small stick, the bow being held against the throat or vocal cords.' This method of holding the instrument against the throat is very peculiar, and reminds one of that curious Brahman instrument, the *nyastaranga*, or throat trumpet, although the effect would seem to differ in the two cases. I do not know of this method of playing in Africa, and probably it was not introduced from that continent, even supposing the Brazilian form of musical bow to be an offshoot from the immigrant African types, which, although probable, is by no means necessarily the case.

Patagonia.—It will be remembered that G. C. Musters[2] in describing the music of the Tehuelche, made the following statement: 'The orchestra consisted of a drum . . . also a sort of wind instrument formed of the thigh-bone of a guanaco, with holes bored in it, which is placed to the mouth and played, or *with a short bow having a horsehair string*' [Fig. 38]. The italics are mine. It is decidedly difficult to understand this method of playing a flute, and it is most unfortunate that the description is given in such very vague terms. But the brief and somewhat ill-expressed reference may perhaps betray a lack of observation in the writer, who may have just jotted down what he thought that he saw, without troubling to investigate the matter further. I have, at any rate, seen no suggested explanation of the passage which can be regarded as at all convincing. Wallaschek's[3] suggestion, without at least some proof that the method will result in musical sound, can hardly be taken as of scientific

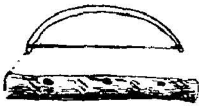


Fig. 38. Musical bow (?) and flute, Patagonia. (From Musters, *At Home with the Patagonians*, 1873, Fig. 8, p. 177. London, John Murray.)

[1] *American Anthropologist*, x. p. 380, 1897.
[2] *At Home with the Patagonians*, 1873, p. 81, and Fig. 8 on p. 177.
[3] *Primitive Music*, 1893, p. 127.

value, especially in view of the boldness of many of that author's statements in regard to musical instruments. When I read the passage in Musters' book, it struck me that there might be a possible explanation of the association of bow and flute. It seemed to me that Musters might have seen natives playing upon a small-sized musical bow, and using a bone—very likely a bone-flute, which would be quite serviceable—for striking or plucking the string. The fact of the bow being necessarily held to the mouth would perhaps increase the illusion, and lead the observer to imagine that the wind instrument was being sounded indirectly by means of the bow, instead of the reverse, i. e. the bow being sounded by means of the flute. I must confess that at that time I was quite unaware of the existence of any type of musical bow so far south in the New World, and advanced the suggestion as an explanation *faute de mieux*. In the Berlin Museum are specimens of Patagonian flute and bow, *colo*, described as 'sowohl Flöte als Streichinstrument.'

I was the more interested to read the recent description by Dr. H. ten Kate[1] of a Patagonian musical bow. He writes, 'Another area to the distribution of the musical bow is found in Patagonia. In August, 1896, I had the opportunity to meet at the La Plata Museum a few Indians from Western-Central Patagonia. One of them, a youth of mixed Tehuelche and Araucanian blood, had a curious musical instrument, which hitherto I had never seen. It consisted of a very simple wooden bow, about 30 cm. long, with a single string made of a tuft of horsehair. When the Indian played upon the instrument one end of the bow was held between the teeth, the other end was grasped with the left hand. The string was struck with one of the long bones of a condor, in a manner similar to the use of a fiddle-stick, and which was held in the right hand' [Fig. 39]. 'The tune produced, although weird and melancholy, was not unpleasing. It had a peculiar wild charm, characteristic of the lonely plains and silent lakes of Western Patagonia. This instrument is called

[1] *American Anthropologist*, 1898, xi. p. 93.

koh'-lo[1] in Tehuelche, which name, it is curious to state, has a certain resemblance to the Maya name for the musical bow, *hool*, and the name *kolove*, given by the natives of Florida, in the Solomon Islands, to the same instrument. This *koh'-lo* was bought from the Indian for the La Plata Museum, where it is now kept in the Ethnographical section of that institution.'

I do not for a moment urge that this description of a musical bow in Patagonia *proves* my inference regarding Musters' account, but at the very least it lends great probability to its being correct. The small-sized bow with horse-hair string, played upon with a good-sized bone, together with the attitude of the player as shown in Dr. ten Kate's illustration, reproduced here, form a very suggestive picture of what Musters probably saw, or what we may reasonably infer he saw, in the absence of any detailed account to prove the playing of a flute by means of a bow.

Fig. 39. Patagonian playing upon the *koh'-lo*, a small musical bow, with bone plectrum. (From Dr. H. ten Kate, *American Anthropologist*, 1898, xi. p. 93.) Specimen in the La Plata Museum.

In reviewing the various types of musical bow to be found in the New World, I must say that I feel that the case of the claims of this instrument to be regarded as indigenous (pre-Columbian) in the Americas can only as yet be dismissed with a verdict of *not proven*. I can find no absolutely convincing

[1] The name *colo* is also given for the little bows which, together with the bone flutes, are exhibited in the Berlin Museum, and which exactly correspond with Musters' figure.

evidence to prove the case, and, in view of the certainty of many varieties having been introduced by the immigrants from Africa, it will require very strong evidence to establish the claim. As regards Central America, one would naturally look to the ancient Mexican codices and other graphic records of antiquity, for proof of the existence of various appliances in early times; but, unfortunately, in the matter of the musical bow these are silent, and unless one accepts Mr. Saville's interpretation of the figure in *Le Manuscrit du Cacique*, a thing which I am not as yet prepared to do, there really seems no direct evidence of pre-Columbian musical bows in the region. While, on the other hand, the remarkable similarities observable between the musical bows of Central America and Africa make one the more sceptical of the theory of the independent origin of the former, one readily admits that there yet remains much to be discovered as to the mode by which the African musical bow has been dispersed, and become adopted by races of non-African extraction, if one is to prove up to the hilt the entirely African origin of this instrument as found in the New World. The difficulty is perhaps most manifest in the case of the examples from Central Brazil and Patagonia; and, unless good evidence of transmission is forthcoming, the belief in an indigenous musical bow in the New World will be largely justified, and the close resemblances between Central-American and African types of the more complex kinds, may require to be interpreted by the theory that the characteristics of the immigrant types have to a great extent been grafted upon the indigenous stock. that there has, in fact, been a kind of hybridization. Of course, the alternative theory of entirely independent origin of all the characteristics, however similar in the two regions, is still open to us, but this is a dangerous one to advance, and one which should only be resorted to when careful investigation has failed to render probable the transmission theory. That cases, striking ones too, have occurred of similar results being quite independently arrived at in widely separated regions

cannot be doubted; it is in keeping with a general law of Nature that under like conditions of the environment (using the term in its widest sense) the organism will respond in like manner to like stimuli; but the too ready acceptance of this factor is liable to discourage rather than to promote minute and careful investigation, and it should be resorted to as a last resource rather than as a primary basis for classification.

ASIA.

Returning to the Old World, we meet in parts of Asia with several forms of instruments which may well be classed in the category of musical bows. In some cases, their close resemblance to instruments already described. from the African continent, suggests very forcibly that the case is not one of analogy and independent invention, but rather of homology and family relationship, and one cannot but suspect that a true relationship exists between certain varieties which are found in India and the very similar varieties whose home is Africa. What is the exact nature of the relationship would be hard indeed to prove, and to enter upon a detailed discussion of so wide a question would carry me too far away; nor is the time as yet ripe for such discussion, in a paper of this nature, to be fruitful; it is far too involved, and the material too scattered and too uncertain. I can only hope that, so far as a study of the geographical distribution of arts and customs can be of service in assisting the elucidation of obscure points in racial affinities and dispersion, the descriptive material in this paper may prove of use at some future time.

Whether the presence of musical bows in India is due to the black aboriginal population, by many regarded as belonging to or allied to the Negroid or Negrito stock; whether the Indian Negroid or Negrito and the African Bantu peoples are offshoots from a generalized people dispersed in different directions from a common centre, a now-submerged 'Indo-African continent,' migrants whose primitive arts and appliances

accompanied them, some of which have remained unchanged in their simplicity, while out of them have arisen forms of a higher order, developed upon somewhat different lines in the two regions, in accordance with the varied environment; or, whether we have here to deal with cases of independent invention in two centres—this is a question which must for the present stand over until sufficient material has been collected and systematized to warrant detailed speculation. The alternative theory, that the presence of similar types in the two regions is due to dispersal along trade routes, is certainly not an adequate solution of the question.

In Africa we can, by means of modern *survivals*, study the evolution of the musical bow from the very commencement, and in India, too, a very similar series of transitions can be found, taking us nearly to the commencement. This, although the series is not nearly so complete, may seem to favour the 'independent-invention' theory, but then these primitive forms may in India be survivals from a very remote antiquity, perhaps antedating the separation of the various branches of the Negroid or Negrito stocks; but here, again, proof is wanting, and the utmost that can at present be said in the matter is, that there seems to be more than mere coincidence in the close resemblance between the forms of the instruments in the two now widely separated regions.

I will now turn to the consideration of the Asiatic types of musical bow in detail.

Japan.—It is unnecessary to do more than recall the legend given above, which ascribes the origin of the *yamato koto* to an extemporized instrument made from six shooting-bows lashed together. I know of no instances of musical bows in actual use in Asiatic regions north of the Himalayas.

India.

Following the example of the god Ṣiva, who, according to the tradition referred to above, discovered and appreciated the musical qualities of the tense bow-string, the modern

natives of India continue to this day to find pleasure in the music elicited by twanging the string of even quite simple bow-like monochords. Even the itinerant cotton-cleaner, *dhuniya*, as he goes his rounds along the streets, constantly twangs the tightly stretched string of his huge cotton-cleaning bow, *dhunki*, which gives out a musical note serving in lieu of a street-call, to announce the man's approach with the appliances of his trade.

North India.—Although I know of no instance in India in which, as in Damaraland, the shooting-bow is temporarily converted into a musical instrument, still, in the *pinâka* (Sanskrit=bow) or *pinâki vina* of North India, we have a musical bow of so simple a type, that it is but a short stage in advance of the extemporized monochord. There can be no question as to its being a lineal descendant of the archer's weapon. Indeed, H.H. Raja Sourindro Mohun Tagore[1] describes the *pinâka* thus: 'A one-stringed instrument played with the tips of the fingers; said to be the father of all stringed instruments. It is known to have been invented by the Hindu god Shiva.' A specimen kindly sent to me by Raja Tagore in 1891 consists [Fig. 40] of a plain bow of weak resistance, made from a narrow, flat lath of bamboo, painted black with designs in metallic tin (applied as we apply shell-gold and silver). The ends of the bow are perforated for fixing the bow-string, which is very fine and of twisted gut. This specimen is in the Oxford University Museum. Other specimens, practically identical with that described, are in the India Museum at South Kensington, the Indian Institute at Oxford, and in the Museum of the Conservatoire Royale de Musique in Brussels[2]; this latter specimen is specialized to the extent of being equipped with a tuning-peg. In the absence of any resonator (and it is not stated that the bow is ever held in the teeth), the notes emitted by the string, when plucked with the fingers,

[1] *Short Notices of Hindu Musical Instruments*, Calcutta, 1877.
[2] *Cat. du Musée Instrumental*, 1893, p. 138.

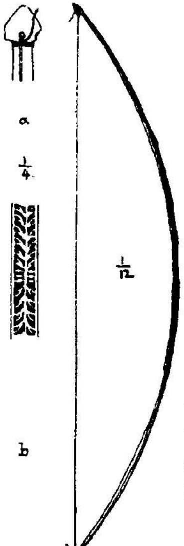


Fig. 40. *Pināka*, simple musical bow, length in straight line 45 in.; Northern India. *a*, one end of the bow; *b*, ornamentation of the back of the bow. Specimen sent to me by Raja S. M. Tagore. Oxford University Museum.

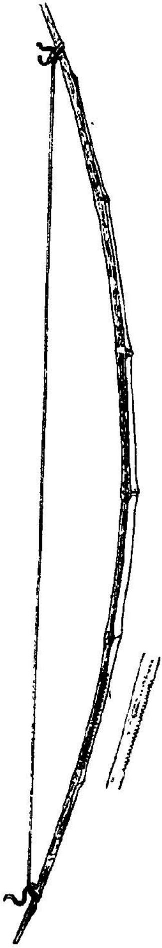


Fig. 41. *Darkun*, musical bow with notches along a portion of one edge, used by the Bhuiyārs of the hills of Mirzapur, N. W. P.; length in straight line 75 in. Obtained by Mr. W. Crooke. Oxford University Museum.

must be exceedingly feeble, and there seems little to recommend the *pinâka* as a musical instrument, except, perhaps, its celestial origin. As a representative of a very early type it is of great interest, surviving as it does in the midst of instruments of very high class, many of them its own descendants, as it were, whose pedigree, though obscured by the dropping out of important intermediate links, can be more or less clearly made out.

I may mention here two peculiar forms of musical bows used in India at the present day. While they are, by reason of their simple bow-like form, not to be classed among instruments of higher form, but rather with the more primitive types of the musical bow, it will none the less be seen that they are decidedly aberrant forms, whose peculiar features do not seem to have led up to the development of instruments of more specialized types, and they appear to be somewhat isolated members of the family.

Bhuiyârs of Mirzapur.—The first of these is a bow which was sent to me by Mr. W. Crooke, late magistrate and collector in the Mirzapur district. It consists of a huge bow of bamboo, 6 feet 5 inches in length, tapering towards the extremities, and of considerable strength. It has a tightly stretched bow-string of twisted bark, which is kept from slipping by shoulders cut on the edges of the bow about 6 inches from each end [Fig. 41]. The curious feature in this bow is the presence of a number of notches (twenty-four) cut along one edge of the bow, commencing about 1 foot 2 inches from one end, and occupying a space of about 8 inches. This instrument is used by the Bhuiyârs, an aboriginal tribe in the hills of Mirzapur, N. W. P., during the ceremonies performed at their annual worship. The mode of playing is peculiar. According to Mr. Crooke's description, a common basket, which has a cane loop at the bottom, is placed loop uppermost on the ground, and one end of the bow is fixed in the loop, the other end resting on the ground [Fig. 42]. A man sits down in front, and rubs a short piece of bamboo

up and down across the notches on the bow. This makes a droning sort of reverberation against the basket, which can be increased if a brass pot is placed inside the basket. The bow-string is of course thrown into vibration by the jarring caused by rubbing the stick across the notches. Mr. Crooke tells me that this instrument is called *darkun*.

Korwas.—He has seen Korwas also play upon it, though in a slightly different manner from that given above. He says, 'Theirs was somewhat different, as it was played with a sort of split-bamboo comb. In good hands it makes a horrible, drumming noise, and it is used at the Kurma or sacred dances of the Dravidians, of which you will find a full account in Dalton. This is a regular saturnalia, and all sorts of licence prevail.'

It is particularly interesting to note the exact resemblance between this instrument and the smaller bow with notches used by the Muschi-kongo of West Africa described above. I know of no other bow of this type from any other region than the two given. As is the case with the African notched bow, the Mirzapur form is really a 'hybrid' instrument, a combination of 'musical bow' and 'musical rasp.' The latter class of instruments is well known in India, instance the iron *kokurai* or *kokkara* of South India.

Fig. 42. The same, showing position in which it is placed for playing, resting upon a basket inside which is placed a metal vessel. (From sketch by Mr. Crooke.)

Shánárs of Travancore and Tinnevelly.—The other aberrant form of musical bow which I would refer to here is one mentioned by the Rev. S. Mateer[1] [Fig. 43] who, in describing the devil-dancing of the Shánárs of Travancore and the

[1] *The Land of Charity*, 1871, p. 217; the description is quoted from a paper on 'The Tinnevelly Shánárs,' by Dr. Caldwell. The figure [Fig. 43] is taken from an illustration in Mateer's *Native Life in Travancore*, 1883, p. 107.

instruments used in the ceremonies, says, 'The favourite instrument, because the noisiest, is that which is called "the bow." A series of bells of various sizes is fastened to the frame of a gigantic bow, the strings are tightened so as to emit a musical nôte when struck, and the bow rests on a large, empty, brazen pot. The instrument is played on by a plectrum, and several musicians join in the performance. One strikes the string of the bow with the plectrum, another produces the bass by striking the brazen pot with his hand, and the third keeps time and improves the harmony by a pair of cymbals. As each musician kindles in his work, and strives to outstrip his neighbours in the rapidity of his flourishes, and in the loudness of the tone with which he

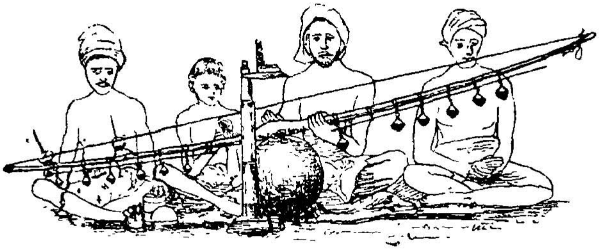


Fig. 43. Musical bow with bells attached to it, used in 'devil-dances' by the Shánárs of Travancore and Tinnevelly. (From the Rev. S. Mateer, *Native Life in Travancore*, 1883, p. 107.)

sings the accompaniment, the result is a tumult of frightful sounds, such as may be supposed to delight even a demon's ear.' This quaint instrument is in reality a very simple type of musical bow on a large scale, whose single bow-string (Mr. Mateer says 'strings,' but only one is figured) is made to vibrate by means of strikers or plectra; the resonator is not part of the instrument itself. The addition of rows of bells tied to the bow gives the instrument an appearance of some complexity, and, by introducing a new feature, separates this instrument from the ordinary musical bows of simple type. The simple strung bow forms the basis of the structure of these types of musical bow, and, in spite

of such extraneous additions as notches and bells, the instruments must remain classed with the bows, even though the borrowed features may supply a larger volume of the sound produced than does the bow-string itself.

In Africa, as we have already seen, the early stages in the development of the musical bow and its descendants from the ordinary hunting-bow, which could temporarily be converted into a musical instrument, consisted, firstly, in making bows designed for use solely for musical purposes, and, secondly, in the addition of a resonator (a gourd usually) attached to the bow and forming part of the instrument. In India it seems that an almost identical series of transitions has occurred, to judge from modern instruments, which appear undoubtedly to represent survivals from various stages in the developmental history of this group of instruments. The first stage, i.e. the temporary conversion of the shooting-bow to serve as a musical monochord, we have to assume, since it no longer exists except in tradition. The second stage, i.e. the simple bow-like instrument made for musical purposes only, we have seen represented in the *pinâka*. There are, further, in India certain instruments which show clearly that they have been evolved from a musical bow with a gourd-resonator attached to it, from a form, in fact, very closely resembling, if not identical with, the typical Zulu *gubo*.

It has been questioned by most authorities on Indian ethnography whom I have consulted in the matter, whether there still exists in any part of India a type of instrument identical with the South African *gubo*. I was anxious to ascertain this point, if possible, because there is in the Pitt Rivers collection a small figure of a man carrying in his hand a musical bow of precisely this form [Figs. 44 and 44 *a*]. This figure, I have every reason to believe, is of native Indian workmanship, an opinion held, I believe, by General Pitt Rivers, who added the specimen to his collection. In make and general character it exactly resembles other figures made in some parts of India to represent native life, tribes, castes, &c. It is of wood, carved and coated with plaster, well

Fig. 44. Small wood-and-plaster figure ($7\frac{3}{4}$ in. high) of a native with musical bow, having a resonator, string-bracing, and plectrum. The figure is of Indian make, and is believed to represent some black Indian hill-tribesman. Pitt Rivers Collection, Oxford University Museum.

Fig. 44 *a*. Side-view of Fig. 44.

modelled and coloured, and stands upon a discoidal, red-lacquered, wooden stand. The figure is painted to represent a man of very dark colour, approaching to black, with the hair in a peculiar, pad-like form on the top of the head, resembling somewhat a skull-cap, the head being shaved below the edge of the hair-mass, which is sharply defined. The teeth are very prominent. The only clothing is a cotton loin-cloth, and a bag or quiver is worn at the back suspended by a sling from the left shoulder.

The interest of this little figure is centred in the instrument which the man is represented as holding. It is a musical bow of a form identical with the South African *gubo*. It is a simple strung bow, with the bow-string braced to the bow, a little below the centre, by a little loop of string. At the same point is fixed a resonator, probably a gourd, though in the model it is of clay. In the right hand is held a little stick for tapping the bow-string. I have, so far, been unable to identify the native represented with any black aboriginal Indian race or tribe, though I have consulted many authorities, some of whom have seen in the figure strong resemblances to native tribesmen with whom they have been in contact; matters of detail have prevented their identifying the figure for certain with any particular tribe known to them. Mr. J. F. Hewitt, especially, has made many inquiries on my behalf, and has given me the benefit of his own wide knowledge; and Raja Tagore, Mr. W. Crooke, and others have also communicated with me upon the subject, leaving me much indebted to them.

The alternative view is the one to which one would naturally be led at first sight, viz. that the native represented belonged to some East- or South-African tribe, and the instrument is merely the normal type of that region. Still, some of the details do not seem to belong to that part of the world, and there remains the fact that the figure appears clearly to be of native-Indian make, which presents some difficulty, since the careful and detailed representation undoubtedly seems to point to personal contact between the

artist and the native type portrayed. I should be glad to hear of other similar figures, and to learn the opinion of others regarding the race or tribe represented.

Whether we regard this model as representing a native of Africa or of India, the musical bow in the hands of the figure is of interest in considering the natural history, so to speak, of this class of musical instruments in India. A comparative study of the various allied types clearly points to the at any rate former existence in India of a musical bow of a form identical, or very nearly so, with that shown in the model, in fact with the ordinary South-African bow with gourd-resonator. It may well be that this actual instrument may yet be forthcoming from some little-known region of India, where it might be relegated to some purely ceremonial use, a circumstance which would render it more likely to have hitherto escaped notice. *Primitive* instruments of all kinds show a great tendency to survive in ceremonial or religious use, after they have long ceased to be employed for ordinary, every-day purposes, and the investigation of the details of native ceremonials often reveals some early type of instrument, whose existence was hitherto unsuspected, and whose continuance is due to the conservatism which characterizes nearly all forms of ceremonial procedure. In India this is markedly the case with the simpler types of musical bow, as we have seen in the instances of the Bhuiyâr and Shánár forms, both of which seem to be relegated to religious ceremonial.

Chota Nagpûr, Orissa, &c.—That an instrument very closely resembling the South-African *gubo has* existed in India is, I think, rendered more than probable by the existence of such types of instruments as the *tuila* used by the natives of Chota Nagpûr, the Ho Koles, and other aboriginal tribes. This instrument is but a slight modification of the ordinary musical bow with gourd-resonator. The chief difference lies in the 'bow' being straight and not curved, and this necessitates a contrivance for keeping

the string away from the bow, just as is the case in the Mexican *harpa*, which, as mentioned above, is also a *straight* derivative of the musical bow. The 'bow' of the *tuila* is of bamboo, 2 feet 6½ inches long in the specimen figured [Fig. 45]; into one end is inserted a piece of wood carved to a shape of a blue-shark's tail, that is, with the upper portion of the tail-fin much longer than the lower, and curved [Fig. 45*b*]. This may be carved into the figure of a horse's head [Fig. 45 *a*]. To the end of the longer portion the end of the single string is attached, so that at this end it is kept well away from the 'bow' (in the Mexican specimen the long tuning-peg effected this in a similar manner). The string gradually approaches the 'bow' towards the other end, where it is lashed round it a few inches from the extremity. Just above where it is fastened the string is very slightly bridged up by a little piece of wood or leather, about ⅛ inch thick, inserted between the string and the bamboo. Towards this end of the 'bow' is attached a resonator made from half a gourd; this is fixed somewhat loosely by a string which passes through a little collar cut from a piece of gourd, which is interposed between the larger gourd and the 'bow.' This latter arrangement is also seen in the musical bow from Réunion Island shown in Fig. 30. In playing, this instrument is held vertically

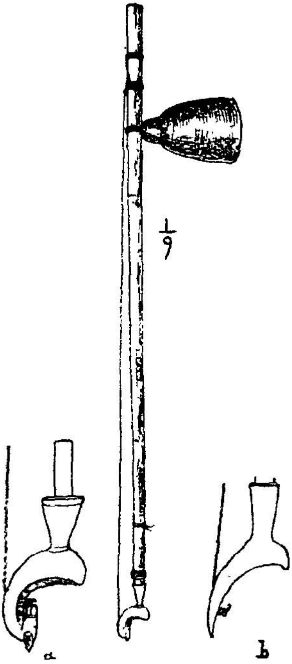


Fig. 45. *Tuila*, straight musical 'bow' with gourd-resonator, total length 33½ in.; Chota Nagpûr. *a*, lower end of the instrument. Oxford University Museum. *b*, lower end of another specimen belonging to Colonel Samuels.

[Fig. 46], the end at which the string is lashed round the 'bow' being uppermost. The gourd resonator is pressed against the right breast; the fingers of the right hand pluck the string near the lower end of the bow, while the notes are varied by fingering the string high up with the left hand. Some three or four notes are produced as a rule, but the instrument is capable of better things, for Mr. Hewitt tells me that all the notes of our gamut can be elicited by a skilled performer, and he adds that Colonel Samuels 'heard Christmas-hymn tunes played faultlessly by a Christian convert on one of these bows.' The strings are of catgut or of wire, or, in the wilder districts, as Mr. G. Webb Ware informs me in describing the *bajah* — a nearly identical instrument common throughout Chota Nagpûr, Orissa, and Cuttack — of a string of tussore silk, which is procured in the jungles.

Fig. 46. Performer upon the *tuila*; Chota Nagpûr. (From a photograph kindly sent by Colonel Samuels.)

Mr. J. F. Hewitt[1], in describing the 'Song of Lingal,' the national Ghond epic (Cantos I, II), tells how Lingal, who taught the ancestors of the Ghonds agriculture, how to procure fire, &c., played to Rikad and his wife 'on the musical bow he had made, as the Koles do now, by fixing a bottle gourd as a sounding-board on the string of a tightly strung bow'; and, on p. 205, he quotes from the *Rig Veda*[2], 'The cymbals (*gargara*) sound. The drums (*godha*) resound. The bow-string (*pinga*) twangs;' and he adds in a note, 'as for *pinga*, it is the bow, but not the bow of the fiddler, but the one-stringed bow with the sounding-gourd behind it, to give it resonance, which is played by the Hos at these dances,' i.e. the religious dances of the Dravidian

[1] *The Ruling Races of Prehistoric Times*, 1894, p. 49.
[2] viii. 58 (69), 7–9.

Ho Koles at the Māgh festival. Mr. Hewitt tells me that sometimes the gourd is attached to the string instead of the bow; he has seen both kinds. A note and sketch from Colonel Samuels show that the Koles sometimes sound the string with a rude fiddle-bow, instead of twanging it with the fingers.

It would certainly seem that these instruments, the *tuila* and *bajah*, form an important intermediate link in the developmental chain of such highly specialized instruments as the *vina* of India, but of this I shall have occasion to write on a future occasion. Their present interest lies in their being types of monochords derived almost directly from a form of the musical bow which must have closely resembled the typical Kaffir variety. The chief modifications are due to the substitution of a straight stick for the curved bow.

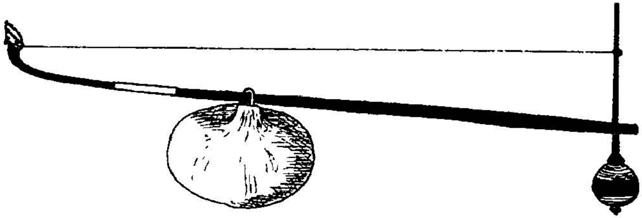


Fig. 47. Musical bow with tuning-peg and gourd resonator, length 30 in.; Siam (probably Laosian). (From W. Webster's catalogue, Aug. 1895.)

Siam.—I know of no musical bow of very primitive type in 'Further India,' and have no record of any nearly related instrument from Burma. A closely allied, though slightly specialized monochord occurs in Siam. A specimen was recently in the hands of Mr. Webster of Bicester, and a figure of it was published in his catalogue (Aug. 1895) which is reproduced with his permission here [Fig. 47]. It consists of a straight mahogany 'bow,' in two parts, joined together with a brass ferule, tapering from one end to the other, the thinner end being curved over and carved with a dragon's head termination to which one end of the single string is attached. The other end of the string is fastened to

a very long, slender tuning-peg with large ball-head, which passes through a hole in the thicker end of the 'bow.' By means of the long tuning-peg and curved end the string is kept at a good distance from the 'bow.' To the bow is attached, somewhat loosely, half of a good-sized gourd, which acts as a resonator, and is pressed against the body in playing, just as is the case with all, or nearly all, musical bows with gourd resonators. This instrument is said to be used by village minstrels. It is not stated whether the string is sounded by being plucked, struck. or with a fiddle-bow, nor whether the notes are varied by fingering the string or otherwise. It is not mentioned in the *Notes on Siamese Musical Instruments*, published in 1885 by Messrs. W. Clowes and Sons, nor in Bowring's *Siam*, nor any other work of which I have knowledge. It is clearly a near relative of the *tuila* of Chota Nagpûr, and other simpler forms of musical bow; the tuning-peg again recalls the *harpa* of Mexico.

Cambodia, Laos, Tenasserim, Kelantan.—It is doubtful whether this instrument is, strictly speaking, Siamese. I have made sundry inquiries regarding it on this point. Mr. H. Warrington Smyth ascertained from a Siamese friend that it is Cambodian, called in Laos, at Chieng-mai, *piah*. He adds that it is 'played with the resonator against the left breast, and the lower end on the right knee. There is a little piece of ivory or bone to be tied to the middle finger of the right hand when playing.' He saw the instrument played upon at Wagawng in Tavoi. Mr. Stanley S. Flower also writes to me that he hears, on inquiry, that this instrument is Laosian and not Siamese, and also mentions Chieng-mai as a locality for its occurrence. while closely similar forms are found amongst the Malays of Kelantan. Altogether there seems to be a wide distribution in Indo-China for this and nearly allied forms. Mr. Flower also sends me a sketch [Fig. 48] of a very closely related Laosian instrument, called *see-saw-laos* in Siamese. It is

somewhat more specialized, and consists of a 'bow,' 3 feet 8 inches long, of hard, black wood. The thinner end is shod with a metal ferule the extremity of which is fashioned into a buffalo's head, looking inwards. To this are attached *two* strings which are fastened to two ivory tuning-pegs passed through the thicker end of the 'bow,' the butt end of which is shod with ivory. A half-gourd mounted upon an ivory stalk is fixed toward this end. The instrument is held in the left hand across the body, and the strings are plucked by the fingers of the right hand. This is clearly an improved form of the other; both in the *two* strings and in the elaborate finish of the instrument we see a marked advance, although the close relationship remains obvious.

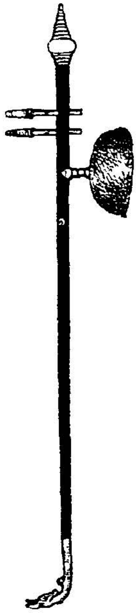


Fig. 48. Modified form of the same instrument [Fig. 47], adapted for two strings; called *see-saw-laos* in Siamese; Laos. (From a sketch kindly sent by Mr. Stanley S. Flower.)

In order to trace further the geographical range of the musical bow it is necessary to turn southward into the region of the Malayan Archipelago, where a few types may be found.

MALAYAN ARCHIPELAGO.

Borneo.—We meet with a very primitive type of musical bow among the Tanjongs of Rejang, Sarawak, North Borneo. There is a specimen in the Brooke-Low collection, and of this I was enabled to copy a photograph through the kindness of Sir Hugh Low [Fig. 49]. The same instrument is figured and described from Mr. Brooke-Low's notes, in H. Ling Roth's work[1]. Mr. Low describes the *busoi*, as it is called,

[1] *The Natives of Sarawak and British North Borneo*, 1896, ii. p. 260; see also *Journ. Anthrop. Inst.*, xxii. p. 63.

as 'formed of a bow resting on the ground in a hollow vessel of earthenware or metal, and the string is made to vibrate with a plectrum.' The note accompanying the photograph is rather more explicit; it runs thus: 'No. 59, Tanjong *busoi* and *aran*. The wooden disc is placed over a hollow pot. The bow is held across it with its arc resting upon it, and the string is struck with a wooden plectrum.' As will readily be seen, the bow itself is of extremely simple form, and the resonator forms no part of the instrument, but is an extempore addition in two parts, the disc and the hollow vessel. The case is analogous to the similar use of extemporized resonators in Africa and India. I have not as yet succeeded in obtaining an example of the *busoi*.

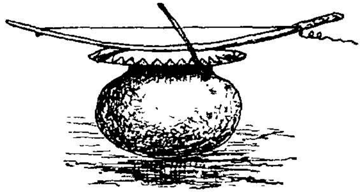


Fig. 49. *Busoi* and *aran*, simple musical bow, resting on wooden disc placed over earthen pot; Tanjongs of Rejang, Sarawak, North Borneo. (From a photograph lent to me by Sir Hugh Low.) Brooke-Low Collection.

Timor.—Featherman[1] mentions the occurrence of a very simple and unspecialized form of the instrument in the island of Timor. 'Soft but feeble tones are produced by striking with a stick a bow of wood strung with a metal wire. This instrument serves as an accompaniment to the song, and is played to indicate the measure of the dance.' I have no details regarding this instrument, and the writer unfortunately gives no reference.

Timor Laut.—Dr. H. O. Forbes has informed me that he saw used in Timor Laut a rudimentary bow-like monochord.

Gilolo (Halmahera).—In the Moluccas we meet with a type of monochord, which, although it presents several specialized features, is none the less clearly a near relative to the musical bow. A specimen [Fig. 50] in the Vienna Ethnographical Museum (No. 13,813) was collected by H. G. Campen in

[1] *Social History of Mankind—Papuo-Melanesians*, p. 461.

1881. This, called the *suleppe*, is used by the Alfuros of Gilolo, and especially by youths when serenading their sweethearts at night. It consists of a laterally flattened bar of

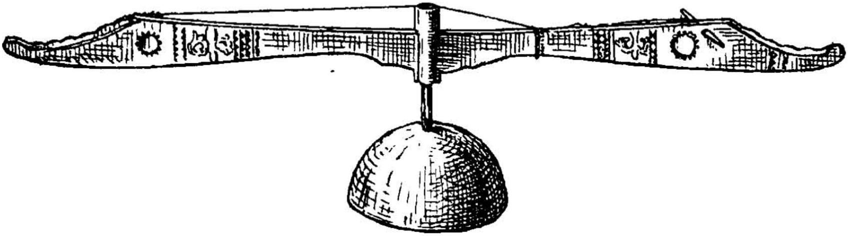


Fig. 50. *Suleppe*. modified musical bow with resonator and tuning-peg, also a bridge and bracing-string; length c. 26¼ in.; Alfuros of Halmahera (Gilolo). Obtained by H. G. Campen, 1881. (Sketch kindly supplied by Dr. F. Heger.) Vienna Museum.

hard, dark wood, 67 cm. long, and 13 cm. wide at the centre, shaped in an ornamental manner, and decorated with incised ornament. To its centre is loosely suspended by a number of strings a half-cocoanut, to act as a resonator. A single string of thin brass wire is fixed towards one end of the bar, and is attached towards the other end to a tuning-peg of wood. The wire is bridged up at the centre by a little bamboo bridge, which is forked below, like a clothes-peg, so as to fit closely 'astride' of the bar, or 'bow,' as I would still like to call it. Between the tuning-peg and the bridge the string is drawn closely down to the 'bow' by a little string-bracing. A specimen identical with the above in all essential particulars is in the Ethnographical Museum at St. Petersburg, and also hails from Halmahera. In playing [Fig. 51], the hemispherical resonator is pressed against the breast; the string is twanged with the fingers of the left hand, and the note is varied by fingering with the right hand. Campen's

Fig. 51. Performer upon the *suleppe*. (Sketch from H. G. Campen's original drawing, sent by Dr. Heger.)

original sketch, of which the figure here given is a copy kindly sent by Dr. F. Heger, shows the manner of holding the *suleppe*, but the instrument itself is but vaguely represented.

A smaller but otherwise very similar instrument [Fig. 52] is in the British Museum, but without definite locality, being indefinitely described as from 'Malaisia.' It may in all probability be referred to the Moluccas. The 'bow' is of bamboo, flat, and with shouldered ends. The bridge is similar to that of the *suleppe*, though proportionately longer, and the large resonator, made of half of a thin-shelled yellow cocoanut, is fixed in a manner similar to the above instrument.

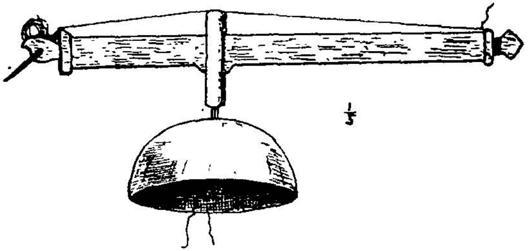


Fig. 52. Instrument of similar nature, but smaller; length 14½ in.; probably from the Moluccas. British Museum.

These interesting Moluccan types seem clearly to be modifications of the typical musical bow with gourd resonator. The form of the 'bow' has become considerably modified, and, in lieu of the flexible bow, a rigid bar has been substituted. The bridge is a new addition, but it is a natural and necessary one in cases where the 'bow' is straight or even *reversed* in curve, since in these cases the position of the tuning-peg prevents its being used as a bridge also, as is the case in the Mexican *harpa* and the Laosian instrument. Apart from these modifications, the general fashion of the instrument recalls at once the familiar African and Indian types. Bow, single bow-string, gourd resonator, all are there; and, possibly, in the loop of cord binding the string to the

'bow' at one point, we may see a survival of the string-bracing with which we are already so familiar in many African and West-Indian forms of the musical bow.

ISLANDS OF THE PACIFIC.—MELANESIA.

New Guinea.—Passing eastward, one first, so far as I am aware, finds fresh traces of this class of instrument in New Guinea. Professor O. T. Mason[1] refers to a very simple type, the *pagola*. 'The bow, strung, is held partly by the mouth, the string being pressed by the thumb of the right hand and struck with a stick in the left. Played by women only.' This description would answer well for many African forms. Presumably this is an *eastern* New-Guinea form, as

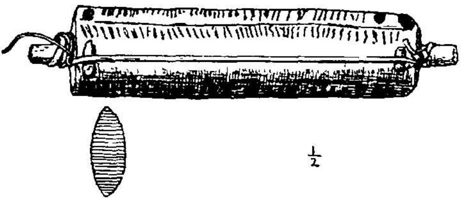


Fig. 53. Very short, straight variety of musical bow, length 5¼ in., the string bridged up at both ends; New Guinea. Oxford University Museum.

Dr. ten Kate says that no such instrument is known in Dutch New Guinea. The name, moreover, is the same as is applied to the form of musical bow found in New Britain, described below. The nearest approach to a musical bow from New Guinea which I have acquired, is a quaint little wooden instrument, from, I believe, the east side of the island, which I recently purchased [Fig. 53]. Its length is only 5 inches, its breadth 1⅛ inches, and it is bi-convex in transverse section. At each end is a spur, cut from the solid, and to these are fixed the ends of a flat string made, apparently, from a strip of the rind of a reed. To keep the

[1] *American Anthropologist*, x. p. 379.

string away from the wood a little bridge of stone is placed between them at each end. One surface of the wood is decorated with burnt lines. To call this a musical bow may seem rather straining a point, and certainly it must be admitted that there is nothing very bow-like in it, the 'bow' having been reduced to such quaint proportions. It is necessary to judge such an instrument in the light of others to which it seems to be certainly related, and which themselves show nearer affinities to the earlier types of musical bow, thus helping to bridge over the gap between the much reduced New-Guinea specimen and the parent types of the series. Judged in this way from a comparative standpoint, and taking the *kalove* of the Solomon Islands, described below, as a seemingly related form, it will be seen that the term musical bow as applied to this little monochord is something more than a mere 'courtesy title.' I am not sure as to how it is played, but its note is feeble, and even if the 'bow' is held to the teeth, comparatively little satisfaction is to be had from it. If played in the manner of a jews-harp, using the mouth cavity as a resonator of varying capacity, a certain degree of variation in the notes is obtainable.

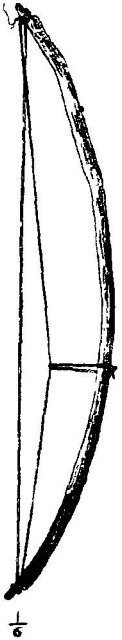


Fig. 54. *Pangolo*, musical bow with two strings, one of which is braced to the bow; length 21 in.; New Britain. (Sent to me by Dr. F. von Luschan.) Oxford University Museum.

New Britain.—In the Island of New Britain the stringed instrument known as *pangolo* presents several features of well-known early types of musical bow. Though small, it is distinctly bow-shaped [Fig. 54]. The specimen figured is 21 inches long, measured in a straight line. The bow is of wood, roughly finished and hardened with fire, and the

ends are cut to form a spur and shoulder. There are *two* strings made of a sort of bast. Actually the string is in one piece, which is fixed to one of the pegs, wound round the other peg, and carried back to the first peg, where the end is again fastened, two 'bow-strings' being thus produced. One of these is braced to the bow with a piece of similar bast-string, a little below the centre. Dr. O. Finsch[1] was, I believe, the first to describe the *pangolo* in detail, and to

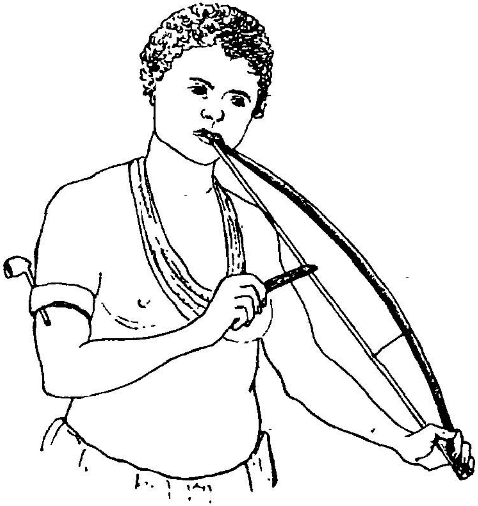


Fig. 55 Woman of New Britain playing upon the *pangolo*. (From Dr. O. Finsch, *Ethn. Erfahrungen aus der Sudsee*, part i. *Bismarck Archip.*, p. 112.)

give a figure [reproduced in Fig. 55] showing the manner of playing the instrument. The player, a woman, places one end of the bow between her lips, pressing with the thumb of her left hand on one of the strings, and plays upon both strings with a short thin stick, producing a very soft, low sound. 'This peculiar instrument,' says Dr. Finsch, 'was

[1] *Ann. des K. K. Naturhistorischen Hofmuseums*, Wien. 1888. *Ethn. Erfahrungen aus der Sudsee*, part i. *Bismarck Archipelago*, pp. 111, 112.

still in common use in 1881, but when I inquired for it three years later, I was answered, "Pangolo die; jews-harp make him kill."' It has, in fact, been ousted by the trade jews-harp. The instrument is of considerable interest when regarded from the point of view of possible affinities with the African early types. If not actually related to the latter, the *pangolo* presents remarkable similarities to them in the following points: (1) The manner of playing on the strings with a small stick; (2) one end of the bow being held in the mouth, to augment the sound to the performer's ears; (3) the use of a bracing-loop for drawing one of the strings towards the bow; (4) the fingering of the string in order to vary the notes produced. It is of much interest to find so many points of resemblance between the appliances of the African Negro and Bantu peoples and the negroid Melanesians, races whose phylogenetic affinities are themselves more than merely problematical. The addition of a second string presents a somewhat divergent feature, but the advantage to the would-be maker of music of 'having two strings to his bow' is obvious, and the development in this direction a most natural one. There are several specimens of the *pangolo* in the Berlin Museum, and a few in other Museums.

Solomon Islands.—Small-sized varieties of the musical bow are found in the islands of the Solomon group (Treasury Island, New Georgia, Rubiana, Florida Island, Guadalcanar, and no doubt others). Dr. Guppy[1] says: 'The women of Treasury Island produce a similar' [to that of the jews-harp] 'though softer kind of music by playing, somewhat after the fashion of a jews-harp, on a lightly made, fine-stringed bow about 15 inches long. This is held to the lips and the string is gently struck with the fingers, the cavity of the mouth serving as a resonator.' *In answer to my inquiries* Dr. Guppy informs me that the instrument is formed like an ordinary bow, and that the string is held nearest to the

[1] *The Solomon Islands and their Natives*, 1887, p. 142.

lips in playing. The bow was made of a rough, flat strip of cane, not hollow. There is no bracing-string as in the *pangolo* of New Britain. This is a simpler and more primitive type than the other allied instruments found in this Melanesian group.

Two examples from the island of New Georgia were sent to me for the Oxford Museum by Lieut. Boyle T. Somerville, R.N., collected by himself in 1893 and 1894, when surveying in H.M.S. *Penguin*. Of these, one [Fig. 56] is a short, slightly-curved bow of light wood, 18⅛ inches long and of uniform thickness throughout, with a small projecting spur at one end and two at the other, round which the ends of the *single* string of twisted vegetable-fibre (? a creeper) are wound in a sailor's 'half-hitch.' The other [Fig. 57], which is from the Mungeri district, has a bow of precisely similar form, and differs only in being furnished with *two* strings, or rather, as in the New-Britain *pangolo*, one string fixed at the end having two spurs and passing round the single spur, to be fixed again at the two-spur end of the bow, thus making two strings for playing upon. Both instruments are, in fact, adapted for either one or two strings. In playing, one end of the bow is held in the mouth. A similar specimen from Rubiana Island is in the Rijks Ethnographical Museum at Leiden, a photograph of which was kindly sent me by Dr. Schmeltz.

An almost identical instrument from Florida Island was sent to me for the Oxford Museum by Dr. R. H. Codrington in 1888. Its native name is *kalové*[1] [Fig. 58]. The bow in this is made of hollow reed, 15⅞ inches long, and has a single little spur at each end, round which are fastened the ends of two fine strings of twisted vegetable-fibre. A minute slip of reed pushed under the strings near each end, serves as a little bridge to raise the strings slightly from the bow which is nearly straight. The bow is held in the teeth in playing. The strings are sounded by striking with a little plectrum of bamboo or reed held in the right hand. Both strings are

[1] Rev. R. H. Codrington, *The Melanesians*, 1891, p. 339.

Fig. 56. Small musical bow with single string, length 18⅛ in.; New Georgia, Solomon Islands. Obtained by Lieut. B. T. Somerville, R.N., H.M.S. *Penguin*, 1893. Oxford University Museum.

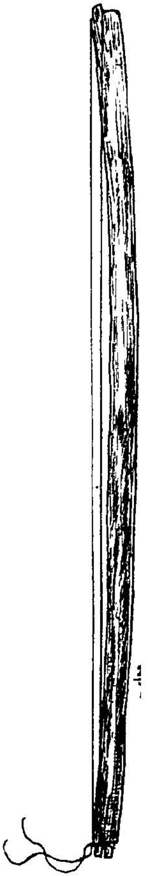
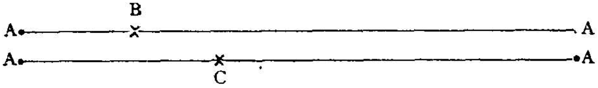


Fig. 57. Similar instrument, with two strings, length 18½ in.; New Georgia, Solo mon Islands. Obtained by Lieut. Somerville, R. N., 1894. Oxford University Museum.

Fig. 58. *Kalové*, nearly similar instrument with two strings, bridged up at the ends, length 15⅞ in.; Florida Island, Solomon Islands. Obtained by Rev. R. H. Codrington. Oxford University Museum.

tuned to one note; one string is permanently stopped with one finger of the left hand, raising the note by a certain interval; the other is alternately stopped and released higher up with another finger. The performer is thus master of three notes (AA, BA, CA). 'The music thus produced,' says



Dr. Codrington, 'is not very audible to anyone but the performer, to whom it gives great delight.'

A specimen identical with that from Florida Island was obtained by C. M. Woodford in Guadalcanar, and is now in the British Museum. There is also one in the University Museum at Cambridge.

Santa Cruz Islands.—In the British Museum there is a small and peculiar specimen of musical bow. It is classed, I am inclined to think rightly, with a number of objects from the New Hebrides, but, on my writing to the Rev. W. Earie who obtained the specimen, I learnt from him that it had been obtained in Santa Cruz to the north of the New Hebrides group. It seems probable that this instrument was brought into Santa Cruz from the New Hebrides, as this type appears certainly to be indigenous in the latter group, and, being of somewhat specialized form, is unlikely to have been developed independently in the two groups. The little bow [Fig. 59] is $19\frac{5}{8}$ inches long, of wood, and curved. The shape is peculiar, being broad and more or less cymbiform, having a concavo-convex transverse section. One end is broad and rounded off, the other is shouldered and narrows suddenly into a long, straight spur. The single string is stout and seems to be made from a length of some creeping vine. At the rounded end of the bow it is passed through a small hole, being prevented from drawing right through by having a thickened, knot-like

extremity. The other end of the string is wound round the spur, and is prevented by the shoulders from slipping. Mr. Earie tells me that in playing the bow is held firmly in the left hand, the blunt end being pressed against the

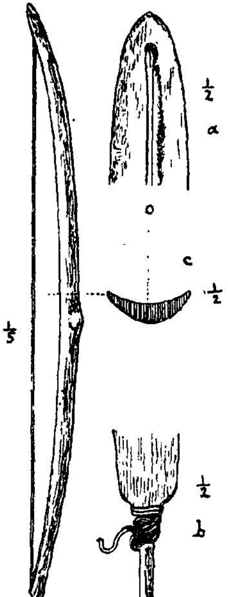


Fig. 59. Small musical bow with single string, length 19⅝ in.; obtained by the Rev. W. Earie in Santa Cruz Island, but probably derived from the New Hebrides. *a* and *b*, the two ends of the instrument; *c*, transverse section across the centre. British Museum.

Fig. 60. Woman performing upon the same instrument [Fig. 59]. (From a rough sketch by Rev. W. Earie.)

teeth. The string is twanged with the thumb or first finger of the right hand, 'the music being produced as with a jews-harp, by 'opening' and 'closing' as they say in voice-production parlance.' The sketch [Fig. 60] is made

from a very rough drawing by Mr. Earie, showing the attitude in playing.

New Hebrides.—That this instrument is native in the New Hebrides is indicated by Professor O. T. Mason[1] who refers to a type, similar to that just described, from Pentecost Island. This is called *vuhudendung*, and consists of 'a small, flat, thin bow of wood. The string passes from a hole near one end to a stud or spur formed on the other. It is held by the teeth and the string struck with a double stick.'

Mr. J. Edge Partington also recently obtained a specimen almost identical with that obtained by Mr. Earie, but with a plano-convex transverse section. This was stated to have come from the New Hebrides. He was good enough to give me this specimen. He also figures in the new series of his valuable 'Ethnographical Album of the South Pacific' (1898), pl. 60, fig. 6, a specimen collected by Mr. J. Jennings in Espiritu Santo Island. It is identical with Mr. Earie's example.

It would be difficult to do otherwise than associate together the various Melanesian types of musical bow in one family-group, they seem so clearly to be related to each other. The *pangolo* of New Britain retains the most bow-like form, though the *two* strings are already present; the spur-and-shoulder ends of the bow are repeated in the smaller and straighter examples from the Solomon Islands, in which either one or two strings occur, and in which bridges obviate the difficulties due to the straightness of the bow. The little New-Guinea example described is merely a very much shortened and thickened variant upon the Solomon Islands type. The New-Hebrides form is the least obviously connected, owing to its somewhat different shape, but it is impossible to separate it from the family-group. The mode of playing by holding the instrument to the mouth is throughout the same.

[1] *American Anthropologist*, x. p. 379.

POLYNESIA.

I have as yet two localities only in which musical bows occur in the Polynesian Islands, though types may perhaps yet be found in other islands, or possibly may have existed and have been ousted, as in the case of the New-Britain *pangolo*, by the jews-harp or some other instrument.

Marquisas.—Featherman[1] mentions the use of a musical bow in Nukahiva, the large island in the Marquisas group. He says, 'The *utete* is a monochord in the form of a bow strung with catgut, which is played by holding one end between the teeth and scraping the string with a small stick.' This would appear to resemble the instrument described by Guppy from Treasury Island in the Solomon group. The native name is of interest, as it is the same (with the very common substitution of *t* for *k*) as that used for a nearly related instrument in the Hawaiian Islands, as described below.

Hawaiian Islands.—One last locality I have to record in this account of the geographical distribution of the musical bow. In the Hawaiian Islands is found an instrument which, in spite of its showing several points of variation from the normal and from all other instruments of the series, is none the less clearly to be associated with the musical bows, as being a near relative of some of the types already described from Polynesian and Melanesian Islands. This is the *ukeke*. I have already drawn attention to the identity of the name with that of the instrument used in the Marquisas Islands. There is a specimen from the island of Oahu, in the Peabody Museum, Cambridge, Mass., one in the Berlin Museum, and several in the Bishop Museum at Honolulu[2]. I am indebted to Mr. W. J. Brigham for a photograph of the latter specimens, which are under his charge, and also for two specimens which he kindly sent to

[1] *Oceano-Melanesians*, p. 83.
[2] *Catalogue of the Bernice Pauahi Bishop Museum*, 1892, pt. ii, pp. 63, 64.

me, together with some details of information. The specimens all show great uniformity in shape and character, and show a variation from the earlier types which seems to be of purely local development, as this form appears to be peculiar to the group. They all consist of a flat piece of wood varying in length from about 18 inches to 2 feet 1 inch or a little more; and from 1 inch to 1½ inches in breadth at the centre, usually narrowing slightly towards the ends. They are plano-convex in transverse section, the strings lying along the flat surface. One end is cut off square, and has two or three notches cut in it, or is perforated to receive the ends of the strings [Fig. 61]; the other end is narrowed to a neck and terminates in a double spur [Figs. 61 and 61 *a*] or a crescentic extremity [Fig. 61 *b*]; in the specimen in the Peabody Museum both ends are alike, squared and three-notched. The strings are usually two or three in number, but, according to Mr. Brigham, may vary from two to six. At the one end of the 'bow' the strings are jammed in the notches, at the other end they are wound round the neck. Little wooden bridges support them at both ends and prevent their jarring against the 'bow,' just as in the Florida Island *kalovè*. In playing,

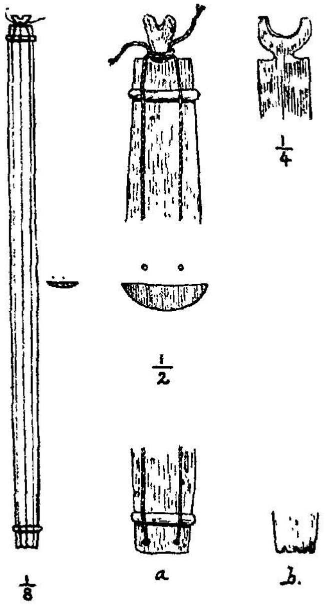


Fig. 61. *Ukeke*, modified musical bow, with three strings bridged up at the ends, length 24⅞ in.; Hawaiian Islands. Specimen sent to me by Mr. W. J. Brigham. Oxford University Museum.

a, the two ends and transverse section through centre of a second specimen, with two strings; length 23½ in. Also sent by Mr. Brigham. Oxford University Museum.

b, the two ends of a specimen in the Bishop Museum, Honolulu, adapted for three strings. (From a photograph sent by Mr. Brigham.)

one end of the 'bow' was held in the teeth, and the strings were struck either with the fingers or with a plectrum. Mr. Brigham tells me that the *ukeke* is a very ancient instrument, and by no means of recent introduction. Hence there has been ample time for the instrument to vary in its new environment and to assume a form peculiar to the group. The name he derives from the verb *u-ke*, to strike, used also to express the ticking of a watch.

CONCLUSION.

It may well be that a closer study of those islands of the Pacific which have as yet been but little subjected to the encroachments of European culture, which so rapidly kills native indigenous arts, may reveal this type of instrument in other localities than those which I have been able to give. There is a long gap between, on the one hand, the Melanesian chain of localities extending from New Britain to the New Hebrides and, on the other hand, the Marquisan and Hawaiian Islands of Polynesia; while these latter are themselves widely separated. It seems hardly possible to doubt that the instruments described, so nearly identical in their essential features and in the manner in which they are played, are truly related to one another, and belong to one phylogenetic series. The differences in points of detail are not such as to impair one's belief in the generic affinities of the whole group; they represent, probably, merely touches of local colour, such as one would naturally expect from the varied environments. Even without a further filling in of links in the chain both of development and of migration, the present material clearly points to a common ancestry for the musical bows of the Pacific. That the dispersal over this area was in a direction from west to east is more than probable, following in a general way what we believe to have been the lines of racial dispersal, and emanating originally from the south-east of Asia, passing thence through the Malayan Archipelago.

A further and more searching investigation of the Micro-

nesian Islands and their culture may reveal musical bows in that region, and it may prove that the dispersal of this instrument into Polynesia may have followed a line of migration *north* of the equator, along the Micronesian chain, and this would point to the prototype of the Polynesian forms having branched off from the prototype of the Melanesian form somewhere west of 13° E. But as yet I can find no record of these instruments in Micronesia, and their absence may be taken to indicate that the musical bow was dispersed eastwards along a line or lines *south* of the equator, taking a late and sudden turn northwards to the Hawaiian group. Be this as it may, the Hawaiian form exhibits marked affinities with such Melanesian types as are found in the Solomon Islands and the New Hebrides, and to this extent favours the theory of a southerly line of dispersal. That it should present a marked specialization of form is most natural, since it is at the distant end of an easterly migration line, and has had a long period of isolation. If the primitive, bow-like character has become obscured in the *ukeke* and in the types from the Solomon Islands and New Hebrides, it has at least been retained to a marked degree in the *pangolo* of New Britain, which cannot be separated phylogenetically from them; and types of a very primitive character occur at intervals in the Malayan Islands. A general survey of the surviving forms in these regions certainly leads one to regard them as belonging to a connected series of strictly related types, which have in some localities persisted in a more or less unchanged and primitive form, as survivals from *early* stages in the developmental history, while in others they show evidence of some advance in structure, an advance, however, which has hardly produced any marked increase in complexity, and which is not sufficient to in any way invalidate the claim to close relationship throughout the Malayo-Melanesio-Polynesian series.

If we are right in ascribing family relationship to the types of musical bow in the Malayan and Pacific regions, we may, I think, fairly assume these to be equally morphologically

connected with the Indian and S. E. Asiatic types which I have described, in spite of the fact that in S. E. Asia the very primitive forms have disappeared, or at any rate have not, so far as I am aware, been recorded. The Laosian form which I have described is obviously related to some of the more specialized Indian types, which are again equally clearly related to more primitive and unspecialized Indian forms, and it would be difficult to assume independent origin for even the more divergent types. We may, in fact, I venture to think, plead with much justification that the original centre whence the easterly dispersal started, lay in some part of India, where we find to this day extremely primitive types still in use, side by side with their more highly developed descendants.

The question whether or no we are to regard the musical bows in India and in Africa as belonging to one family, is one which is difficult as yet to answer. On the one hand we have the probably negroid or negritoid affinities of some of the more primitive aboriginal races in India, and we have also the possibility of a once existing and now submerged Indo-African continental area, whence a dispersal might have originated, as is maintained by many ethnologists. Again, we have the certainty of the existence of numerous apparently primitive customs and arts common to parts both of India and Africa, the instances being frequently very striking. We also find evidence of the development of the simple bow into specialized instruments of music having followed a strikingly similar course in these two regions; for, up to a certain point, the gradual stages of improvement would appear to have been almost identical; the archer's bow passing into the slightly differentiated but still simple musical bow; the later addition of a gourd resonator of nearly identical form in the two regions; the similar manner in which the similar instruments are played. Such evidence may well be taken as pointing to a common origin for the musical bow in India and Africa. At the same time it will be necessary to largely supplement the evidence, and to advance much further the solution of the general problem of the affinities and migrations of races,

before we should be justified in definitely assuming this single origin. One must not blind oneself to the possibility that the musical bow originated quite independently in the two centres, and that the very similar developmental stages which it underwent in these. now at any rate, widely separated parts of the world, may be merely due to man's ingenuity being called into activity in a like manner, under like conditions, and in response to like stimuli, and producing results practically identical in two or more distinct regions. In Africa we have the whole early developmental history of the musical bow plainly before us, illustrated by living examples, commencing with the temporarily converted shooting bow, down to the attachment of a gourd resonator. In India we see nearly the same, though the series is not quite as complete.

If we wish to assume a *common* origin for the musical bows of India and Africa, it would be reasonable also to assume that the Indo-African connection lasted at any rate until after the gourd resonator was added to the bow, and perhaps to maintain that this addition took place in very early times. If, on the contrary, we admit that the addition of a gourd resonator occurred very likely quite independently, and that the other resemblances in form and mode of playing observable in the case of the musical bow of India and the Pacific on the one hand, and Africa on the other, are mere coincidences and not due to any phylogenetic affinities, then there is the less need to assume a common origin for the primary idea of adapting the shooting bow to musical purposes, for that might well arise in more than one centre, since it involves little more than the appreciation of musical qualities in the twang of the bow-string, a thing which is almost forced upon the attention of the archer.

I need not repeat what I have already written upon the musical bow in America. in the matter of its claims to be regarded as indigenous, but will merely repeat my opinion that, so far, I have found no conclusive evidence of its having existed in either Central or South America before the days of Columbus, nor, in fact, before the slave trade brought a large

number of involuntary immigrants from Africa into the New World, and with them a variety of Old-World types of the instrument.

In conclusion let me add that I should greatly welcome any further information as to types of and localities for the musical bow, and would be most grateful for any assistance in the matter of procuring specimens for the University Museum at Oxford, whereby I may be able to render fairly complete the series arranged there. *I am under a great obligation to* those who have already extended their help to me, and have endeavoured to acknowledge the various sources whence I have derived the information at my command.

I propose to deal in the second part of this monograph with the higher instruments which can apparently trace their ancestry, or part of it, back to the primitive and lowly forms to which my present paper has been devoted.

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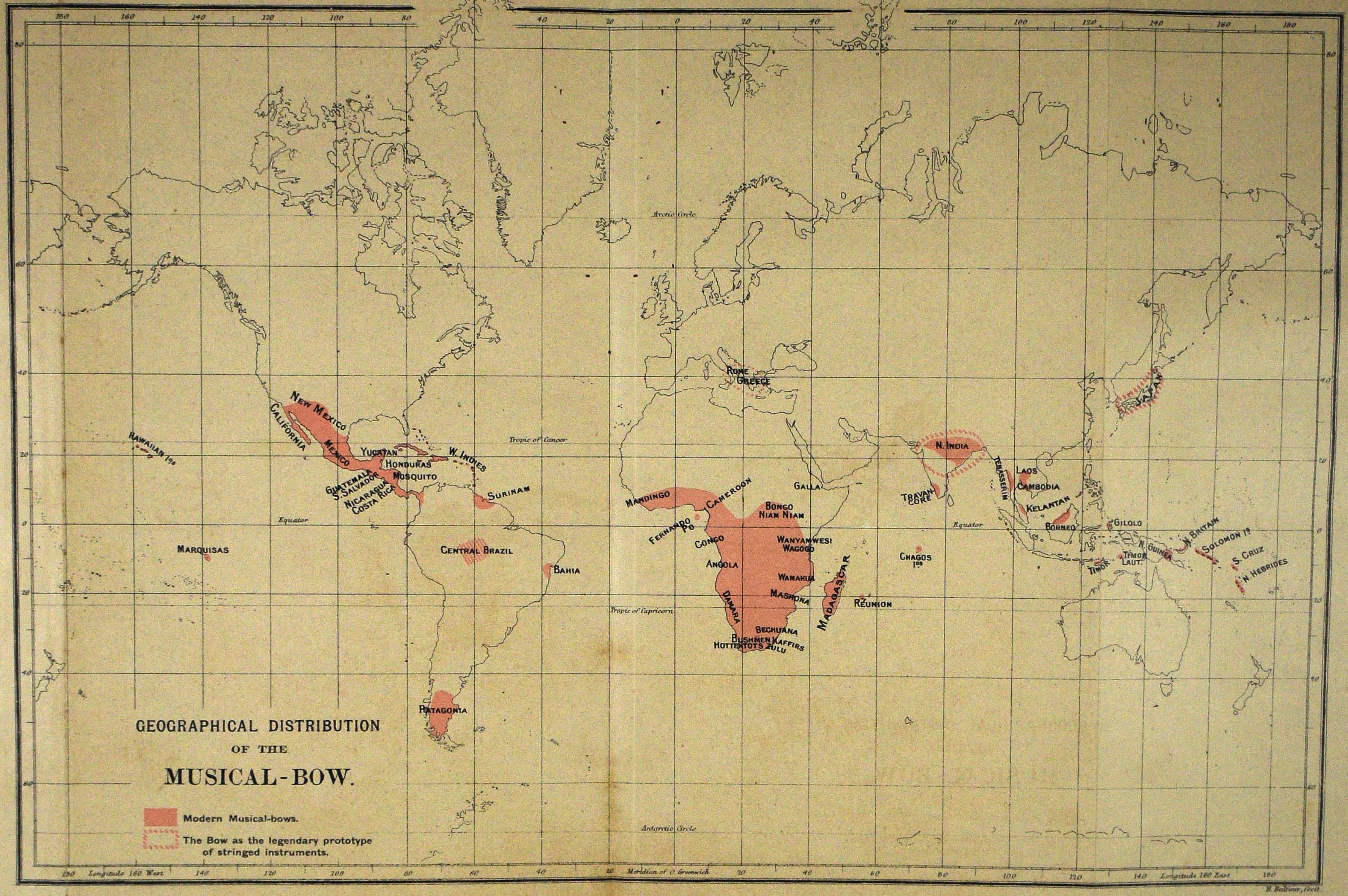
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